BULLETIN OF THE HISTORY OF MEDICINE

ORGAN OF THE AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE
AND THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

Editor—HENRY E. SIGERIST
Associate Editor—GENEVIEVE MILLER

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SEP 1 1944

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EDITORIAL

CLASSICS OF MEDICINE

HENRY E. SIGERIST

A few years ago I was sailing on a Black Sea steamer from Sochi to Yalta. There was a book kiosk on the boat, and it struck me that the books that were displayed most prominently and sold best, were biographies of great scientists and classics of science of which a new series was in course of publication. I watched an intelligent looking boy of about sixteen or perhaps seventeen years of age who browsed for a while and finally bought a volume that contained several treatises on electricity by Luigi Galvani and Alessandro Volta, in Russian translation.

The next morning, strolling on the deck I suddenly saw the young man, sitting on the floor, his forehead in both hands, deeply absorbed in reading his book. Desirous of making a test, I sat next to him and soon we were talking.

"How do you like this book?"

"It's fascinating, but very difficult."

"Why do you read such old stuff?"

He turned around sharply, looked me in the face and snapped out:

"I want to become an engineer. If I cannot understand what they knew a hundred and fifty years ago, how can I ever hope to understand what we must know today!"

I felt like kissing him on both cheeks, but he could not understand why I was rejoicing and probably thought that I was somewhat queer, as foreigners are.

Later, in Moscow, I tried to buy that series of classics of science for our library but could not find a single copy. I was told that the volumes were sold out within a few months, and that the shortage of paper unfortunately did not permit the printing of more than 10,000 copies of each at a time. It was only through the courtesy of a colleague who himself had translated and edited some of the volumes that I succeeded in obtaining several issues.

This experience made me think a great deal. I remembered how much Ostwald's *Klassiker der exakten Naturwissenschaften* had meant to me in my college years. I had read dozens of them and had learned more from them than from textbooks. I find now that my copies are filled with pencil marks. Later, in medical school, I hardly ever left the house without having one of Sudhoff's *Klassiker der Medizin* in my pocket. I read them whenever there was a chance, in the streetcar, waiting for an appointment, and sometimes even in classes when the professor was dull. And I remember every one of them as if I had read them yesterday.

I also thought of the classics of medicine that our own Johns Hopkins Institute of the History of Medicine was publishing and of the pitiful response they had found.

When I took charge of the Hopkins Institute in 1932 I was looking for classics of medicine in English translation that could be used in seminary courses, but I found relatively little. There was Chauncey Leake's Harvey,[1] a book that should be in the hands of every medical student; there were Charles Singer's series which however never advanced beyond four volumes,[2] the beautiful *Selected Readings* published by

[1] William Harvey, Exercitatio anatomica de motu cordis et sanguinis in animalibus. An English translation with annotations by Chauncey D. Leake. Springfield, Ill. and Baltimore, Md., Charles C Thomas, 1931.

[2] Lord Lister, Six papers; with a short biography and explanatory notes by Sir Rickman J. Godlee. London, J. Bale, Sons and Danielsson, Ltd., 1921.

John D. Comrie, Selected works of Thomas Sydenham. With a short biography and explanatory notes. London, J. Bale, Sons and Danielsson, Ltd.; New York, William Wood and Co., 1922.

Sir William Hale-White, Translation of Selected Passages from De l'Auscultation Médiate by R. Théophile H. Laennec. With a biography. London, John Bale, Sons and Danielsson, Ltd., 1923.

Dorothea Waley Singer, Selections from the works of Ambroise Paré. With short biography and explanatory and bibliographical notes. London, J. Bale, Sons and Danielsson, Ltd.; New York, William Wood and Co., 1924.

Charles C Thomas,[3] and the anthology of John Ruhräh,[4] books that make good reading but act more as appetizers because they do not reproduce entire treatises or papers but only select passages. In the field of ancient medicine Brock's *Greek Medicine*[5] was an extremely valuable source-book of which we made wide use, and a few volumes of the *Loeb Classical Library*[6] that contain medical texts were most welcome also.

Many medical classics, however, that we needed for our courses, were unavailable, and so we decided to launch our own series. Soon after we had started, Williams and Wilkins came out with a superb collection of classics, edited by Emerson C. Kelly,[7] and it became questionable whether we should continue with our own project. We decided to do so for various reasons. Kelly's collection is now complete in 5 volumes each of which contains a number of classical texts and costs $10.00. The price puts the series beyond the reach of the average student. The individual texts, moreover, are not available separately so that a student who would like to possess Thomas Addison's *Effects of disease of the suprarenal capsules* would have to buy the whole volume. The great value of Ostwald's *Klassiker* lies just in the fact that every little volume contains one or a few related texts and can be bought for a few cents.

Kelly's collection, furthermore, includes mainly texts that are already available in English,[8] in other words, it does not enrich our medical

[3] Esmond R. Long, editor: Selected readings in pathology from Hippocrates to Virchow. Springfield, Ill. and Baltimore, Md., Charles C Thomas, 1929.

John Farquhar Fulton, editor: Selected readings in the history of physiology, Springfield, Ill. and Baltimore, Md., Charles C Thomas, 1930.

Ralph H. Major, Classic descriptions of disease, with biographical sketches of the authors. Springfield, Ill. and Baltimore, Md., Charles C Thomas, 1932.

[4] John Ruhräh, Pediatrics of the past. New York, Paul B. Hoeber, 1925. Later, two other valuable anthologies were published:

Frederick A. Willius and Thomas E. Keys, Cardiac classics; a collection of classic works on the heart and circulation with comprehensive biographic accounts of the authors. St. Louis, The C. V. Mosby Co., 1941.

Logan Clendening, Source book of medical history. New York, Paul B. Hoeber, Inc., 1942.

[5] Arthur John Brock, editor. Greek medicine, being extracts illustrative of medical writers from Hippocrates to Galen. Translated and annotated. London and Toronto, J. M. Dent and Sons, Ltd.; New York, E. P. Dutton and Co., 1929.

[6] Galen, On the natural faculties. With an English translation by Arthur John Brock. London, W. Heinemann; New York, G. P. Putnam's Sons, 1916.

Hippocrates, with an English translation by W. H. S. Jones, London, W. Heinemann; New York, G. P. Putnam's Sons, 1923-1931. 4 vol.

Aulus Cornelius Celsus, De medicina. London, W. Heinemann; Cambridge, Mass., Harvard University Press, 1935-1938, 3 vol.

[7] Medical Classics, The Williams and Wilkins Co., Baltimore, Md., 5 vols., 1936-1941.

[8] With one conspicuous exception, Frank P. Murphy's translation of Semmelweis.

literature. There is no doubt that every medical student should know some foreign languages, but actually very few master a language sufficiently to appreciate a text fully. Besides, many classics are written in Greek, Latin, Arabic, or in 15th or 16th century vernacular languages that are not easily understood. Translations then become interpretations and are imperative. There was not much need for reprinting Adams' translation of Hippocrates, as Kelly did, since it is probably available in most medical libraries in the edition of the Sydenham Society, and since the Loeb Classical Library includes better modern translations of the same writings. It would have been very desirable, however, to publish translations of the gynaecological and other "non-genuine" Hippocratic writings that are neither in Adams nor in the Loeb Library.[9]

Kelly's collection is extremely important and should be in as many hands as possible and certainly in every medical library where it should be fully analyzed and indexed in the catalogue. For the reasons just mentioned, however, we felt that there was still room for a series of classics and we went ahead with our project, slowly and somewhat haphazardly.

We had no special funds for the purpose and therefore published whatever texts we needed or in which we were specially interested, in the *Bulletin of the History of Medicine*. And since we strongly felt that classics should not only be read but possessed, we had reprints made with special pagination, bound in boards, that could be sold for $ .75 or $1.00.

This procedure had the advantage that it brought classics of medicine automatically to medical libraries and students of medical history who were subscribers to the *Bulletin*, and that it permitted publication of the volumes at little additional cost. It had the disadvantage that the format was rather large, while I would have preferred a pocket size for such texts, and, what was more serious, that it made us dependent on the space available. When the *Bulletin* became flooded with manuscripts, it was very difficult to include such texts and, as a result, we have issued only ten volumes so far.

In 1937 we launched an independent series of American medical classics. We thought that American physicians and students should be familiar with the development of medicine in their own country. Early American medical books are quite rare. They were printed in rather small editions and many copies were used up in the pioneer days. Our idea was to reprint

[9] I was informed by The Williams and Wilkins Company that they sold an average of 800 to 850 copies of the individual volumes of their series, but that they sold several thousand copies of Adams' translation of Hippocrates and that there is a continuous demand for it.

some of the most significant medical texts with introductory essays and in this way to build up, in the course of time, a regular *Bibliotheca medica Americana* that physicians would be glad to have on their shelves. The volumes were printed in an attractive format and type, but the series developed very slowly because funds were scanty and every volume involved a loss.

In 1941, commemorating the 400th anniversary of the death of Paracelsus, we published four Paracelsian treatises that illustrate four different aspects of his personality and work. The translations were the first ever attempted in English. They were made from the original 16th century German and presented considerable difficulties with regard to language and content. Each treatise was preceded by an introductory essay, and the whole volume was undoubtedly an interesting contribution to the history of Renaissance thought.

And so in the course of nine years we published 15 volumes of classics of medicine. We obviously never expected large sales. We published the books for the benefit of our students and of the English-speaking medical profession at large. The best we could expect financially was to recover the costs so that after an initial expenditure the money that came in could be used for the production of new volumes. It was, nevertheless, astonishing to see how little response our classics found. The following list will illustrate this best:

CLASSICS OF MEDICINE REPRINTED FROM BULLETIN OF THE HISTORY OF MEDICINE	Total number of copies sold to June 1, 1944
An Essay on the External Use of Water. By TOBIAS SMOLLETT. Edited with introduction and notes by Claude E. Jones. 1935. 54 pages, frontispiece, 8vo, $1.00	184
On Percussion of the Chest. By LEOPOLD AUENBRUGGER. Translated by John Forbes (1824). Introduction by Henry E. Sigerist. 1936. 31 pages, frontispiece, 8vo, 75 cents	314
A Dissertation on the Sensible and Irritable Parts of Animals. By ALBRECHT VON HALLER. 1755. Introduction by Owsei Temkin. 1936. 49 pages, frontispiece, 8vo, $1.00	79
Contributions to the Microscopic Anatomy of the Pancreas. By PAUL LANGERHANS. Reprint of the German original with an English translation and an introductory essay by H. Morrison. 1937. 39 pages, 1 plate, 8vo, $1.00	182
On Thought in Medicine. By HERMANN VON HELMHOLTZ. Introduction by Arno B. Luckhardt. 1938. 27 pages, frontispiece, 8vo, 75 cents	65
On a New Gland in Man and Several Mammals (Glandulae Parathyreoideae). By IVAR SANDSTRÖM. Translated by Carl M.	

CLASSICS OF MEDICINE REPRINTED FROM BULLETIN OF THE HISTORY OF MEDICINE	Total number of copies sold to June 1, 1944
Seipel. Edited by Charlotte H. Peters and J. F. Fulton with biographical notes by J. August Hammar. 1938. 44 pages, frontispiece, 8vo, $1.00	93
On Miasmata and Contagia. By JACOB HENLE. Translated by George Rosen. 1938. 77 pages, frontispiece, 8vo, $1.00	55
Bacteria, the Smallest of Living Organisms. By FERDINAND COHN. Translated by Charles S. Dolley (1881). Introduction by Morris C. Leikind. 1939. 44 pages, frontispiece, 8vo, $1.00	162
The Value of Health to a City, Two Lectures Delivered in 1873 by MAX VON PETTENKOFER. Translated from the German with an introduction by Henry E. Sigerist. 1941. 52 pages, frontispiece, 8vo, $1.00	120
Maurice Arthus' Philosophy of Scientific Investigation. Preface to *De l'Anaphylaxie à l'Immunité*, Paris, 1921. Translated from the French, with an introduction by Henry E. Sigerist. Foreword by Warfield T. Longcope. 1943. 26 pages, 8vo, 75 cents	123
BIBLIOTHECA MEDICA AMERICANA	
A Brief Rule to Guide the Common-People of New-England How to Order Themselves and Theirs in the Small Pocks, or Measles, 1677. By THOMAS THACHER. (*Facsimile of the three editions of the first North American medical publication.*) Introduction by Henry R. Viets. 1937. liv + 16 pages, 12mo, $1.50	241
Discourse Upon the Institution of Medical Schools in America, 1765. By JOHN MORGAN. Introduction by Abraham Flexner. 1937. vi + xxviii + 63 pages, 12mo, $2.00	212
Adaptation in Pathological Processes, 1897. By WILLIAM H. WELCH. Introduction by Simon Flexner. 1937. xi + 58 pages, 12mo, $1.50	261
On the Influence of Trades, Professions, and Occupations in the United States, in the Production of Disease. By BENJAMIN W. MCCREADY, 1837. Introductory essay by Genevieve Miller. 1943. vii + 129 pages, 12mo, $1.75	44
TEXTS AND DOCUMENTS	
Four Treatises of Theophrastus von Hohenheim Called Paracelsus. Translated from the original German, with introductory essays by C. Lilian Temkin, George Rosen, Gregory Zilboorg, Henry E. Sigerist. Edited, with a preface by Henry E. Sigerist. 1941. xii + 256 pages, 8vo, $3.00	265

Considering that there must be about 40,000 English-speaking medical students and close to 250,000 English-speaking physicians in the world, not counting scientists, dentists, pharmacists, veterinarians, nurses, and members of other allied professions, and considering that there are 315

medical libraries in the United States alone, the sale of our classics can certainly not be called staggering. And this raises the question: Why should such books be published at all? Why should anybody read them? Did the Russian boy on the Black Sea steamer in his spontaneous way answer the question?

Medical writings, books and papers, become out-dated very rapidly, the sooner the more rapidly medical science progresses. In static periods such as the Middle Ages medical information was sought from books that had been written many centuries before, while today a book in order to be kept alive must be revised and published in a new edition every few years. It usually dies with its author, and its place is taken over by a new book written by a new man. The overwhelming majority of all medical writings fall into oblivion after less than twenty-five years and are read or consulted by historians alone.

This is true not only of medical, but also of other books. Most "best-sellers" of today, selections of the Book-of-the-Month Club, are dead after a few years, and some day in the future students will write dissertations trying to find out why a particular book appealed at a given time to large sections of the half-educated middle class.

But there are exceptions. There are books, medical books also, that do not die. They continue to be printed in new editions, are read by generation after generation, and gradually become part of our classical literature.

It is relatively easy to understand how a novel, drama or poem may become classical, but things are different in medicine. Science progresses every day. The truth of today is the untruth of tomorrow. By what mechanism does a medical book or paper survive the test of time?

Here it seems to me that we must distinguish between different types of medical classics. Claude Bernard's *Introduction à l'étude de la médecine expérimentale*, first published in 1865, can still be seen in Paris in windows of medical bookstores. After eighty years, during which medicine made gigantic advances, the book is still bought and read by thoughtful students. Why? Because the experimental method which in the hands of Claude Bernard yielded such brilliant results, is still our chief method of research today so that his book is still fully alive. This is true of his other writings. Most of his discoveries have been generally accepted and have become part of the body of our physiological knowledge. A student can simply learn from a textbook that carbohydrates are stored in the liver as glycogen and can take it for granted. But if he takes the trouble to find out

by what reasoning and through which experiments Claude Bernard made this great discovery, he will not only understand the facts much better but will at the same time learn how knowledge is obtained.

The most difficult task of medical education is teaching the students to think—to think in terms of biology and, I may add, also in terms of sociology. It is easy to teach facts, but difficult to teach correct reasoning by which the facts are correlated. Brought face to face with a patient, the student's task is to reconstruct a segment from a man's life. Through questioning and observation he must find what kind of an individual the patient is, physically, mentally and socially, how he lived and what happened to him up to the time that brought him to the doctor. The examination will reveal symptoms, and the student with all these facts in hand, will then reconstruct and evaluate the biological process that is taking place in the patient whereupon it becomes possible to prescribe a treatment.

Every teacher of medicine teaches how to think, if not explicitly in words, then through his example, but the student can in addition learn a great deal from the great masters of the past. Classical descriptions of disease like those collected in Ralph Major's inspiring book are unsurpassed masterpieces of medical observation and reasoning. The young student who struggles to hear sounds when practising percussion may feel greatly helped by reading the simple presentation of Auenbrugger who invented the method. Who could talk more competently *On Thought in Medicine* than Helmholtz? Arthus' *Philosophy of Scientific Investigation* is an address that every young researcher will read with great benefit, and Henle's treatise *On Miasmata and Contagia* is a superb example of sound biological thinking. Anticipating the germ-theory of disease, long before Pasteur's and Koch's discoveries, he came to the conclusion that miasmata and contagia must be identical and must be animated. Pettenkofer's two lectures on *The Value of Health to a City* are as forceful and persuasive today as they were in 1873 when he delivered them to a Munich audience, and it was very gratifying to hear that the translation we recently published stimulated several South African public health officers to calculate the value of health to their communities exactly as Pettenkofer did for Munich.

Not every physician will become a researcher, but as a student every doctor has spent a number of years at the very source of medical research, in daily contact with a group of men who have devoted their life to the advancement of science, who have permitted him to enter their sanctum, to breath its atmosphere and to share the joys and sorrows of the researcher. This is a great privilege that imposes upon every medical

man the obligation to keep in close touch with science and to make his experience available for the advancement of medicine. Could there be any more inspiring example than Withering's treatise on the foxglove, or Jenner's treatise on vaccination, or Robert Koch's paper on anthrax? They demonstrate what great and lasting contributions the practitioner can make.

It would be a mistake to believe that research can be carried out only in lavishly equipped institutions. Certain investigations obviously require very elaborate instruments and apparatuses and all the resources of a hospital, but the practitioner working up his cases, with the modest means available to him can without any doubt make important contributions. He sees cases that never come to a hospital, and I should think that such subjects as heredity, human constitution, psychological behavior, social etiology, to mention only a few, present a wide field of investigation to the practitioner. The German pioneer of modern social medicine, A. Grotjahn, gathered his rich experience as a general practitioner. The great Swiss ophthalmologist Alfred Vogt did some very important work while he was a small-town practitioner. There are many classics of medicine that demonstrate this point unmistakably. The doctor who takes them along when he enters practice and keeps them on his shelves, will find them a constant source of inspiration.

How often have we not wished that we could have lived at the time of Claude Bernard, of Pasteur or Osler, that we could have been their students, could have listened to their teachings. We can be their students today. They are not dead. They talk to us through their writings. By reading their books, papers or addresses we enlarge the circle of our teachers immeasurably. The greatest minds of medicine enter our classroom and admit us to their clinics and to their laboratories. Textbooks grow out of date because they give a cross-section through the knowledge that a period has of a given field. Original as they may be, they necessarily always have a certain compilatory character. But monographs, the papers in which a researcher describes his new findings, or writings such as the immortal essays of Osler in which he expounded his philosophy of life and his philosophy of medicine: they remain young, appeal to us immediately and bring us in close touch with the minds that created them.

There is another aspect to the matter. Students in the course of their studies have to learn many very difficult and complicated subjects. The historical approach is undoubtedly one that greatly helps us in understanding difficult problems. As a student in high school I was a very poor mathematician until I began to study the history of mathematics.

Then all of a sudden things were clear, I understood them. Goethe was certainly right when he said: *Die Geschichte der Wissenschaft ist die Wissenschaft selbst*. And the Russian boy on the Black Sea steamer was correct when he felt that once we have mastered the knowledge of the past we are better prepared to assimilate the more complex knowledge of our day. The reading of medical classics, therefore, is not only a source of inspiration, not only teaches us to think, but is also a very good method of acquiring factual knowledge.

Facts are brought to us in a much more impressive way through the original writings of the men who discovered them than through textbooks. In Gray's Anatomy the parathyroid glands are described on two pages in a sequence of matter-of-fact sentences. The description of their anatomy begins:

> The parathyroid glands are small brownish-red bodies, situated as a rule between the posterior borders of the lateral lobes of the thyroid gland and its capsule. They differ from it in structure, being composed of masses of cells arranged in a more or less columnar fashion with numerous intervening capillaries. . . .

Ivar Sandström of Upsala who discovered the glands in 1877 and described them in 1880 begins his paper thus:

> About three years ago I found on the thyroid gland of a dog a small organ, hardly as big as a hemp seed, which was inclosed in the same connective tissue capsule as the thyroid, but could be distinguished therefrom by a lighter color. A superficial examination revealed an organ of a totally different structure from that of the thyroid and with a very rich vascularity. . . .

Those two words, *I found*, make the whole difference in the world, and in describing the new glands Sandström gives a colorful report of a personal experience. A modern textbook obviously conveys more information on the subject because it summarizes all the work done on the subject from 1880 on, but a student who in addition to using a textbook reads some of the basic original papers will understand and remember the facts much better.

There is, finally, another group of classics of medicine that we reprint and read for somewhat different reasons. We translate and publish works of Greek, Mediaeval, Renaissance, 17th and 18th century physicians because they are great historical and cultural documents, stepping stones in the development of medicine. We make them available because we believe that the physician should be an educated man and not a mere technician. He should have some knowledge of the history of civilization, and where could he find a better introduction into the subject than in the

history of his own craft and science? Not every doctor can appreciate Plato, but he will immediately feel at home when he reads a Hippocratic writing because he is familiar with the subject matter. Ambroise Paré's treatise on gunshot wounds of 1545 does not teach us how to treat war wounds today, because surgery has greatly advanced in four hundred years and methods of warfare have changed, but it is a great document of the history of surgery, which revolutionized the treatment of gunshot wounds at the time. It illustrates an aspect of life in the Renaissance, and through it we become acquainted with an interesting and most lovable character of the period.

We know much more about syphilis and typhus than Girolamo Fracastoro did, but his treatise on contagious diseases of 1546 has become a classic for the correctness of the observations and the soundness of the reasoning it contains. Like Paré's treatise, it also illustrates an important aspect of the period, and the same is true for the works of Paracelsus, Vesalius and many other medical writers.

The earlier classics of medicine appeal not only to medical readers. The Hippocratic writings are just as important to the history of philosophy as to the history of medicine, and whoever studies Greek civilization in the classical period cannot ignore them. Bernardino Ramazzini's treatise on the diseases of craftsmen of 1700 is not only the great classic of industrial medicine, but an extremely important source to the history of labor conditions. In the same way Benjamin W. McCready's essay *On the Influence of Trades, Professions and Occupations, in the United States in the Production of Disease* of 1837 recently published by our Institute, is far more than a medical document. Written by a young doctor who had not much medical experience in the field, it nevertheless gives a very good picture of living and labor conditions in this country and particularly in New York, one hundred years ago. McCready's dissertation was not a contribution to world medicine, but it deserved being reprinted as a source to the history of American civilization,[10] just as we reprinted Thomas Thacher's broadside on small pox of 1677 because it was the first medical text printed in this country, or John Morgan's *Discourse upon the Institution of Medical Schools in America* of 1765, because it marked the beginning of our first medical school.

In spite of the fact that we already have a number of medical classics available, I think there is still room for another more comprehensive and

[10] See in this connection: Richard H. Shryock, The need for studies in the history of American Science, *Isis*, 1944, 35: 10-13.

more systematic series of classics, and if somebody should happen to give me $10,000 I know how I would spend them. I would consult with my colleagues and would find out from them which original articles they thought students attending their courses should read, in addition to using textbooks. I would reprint these articles, would have them translated if necessary, and would publish them, each one separately, or related ones together, in booklets of pocket-size, beautifully printed as becomes such texts, each one with a brief introduction pointing out the significance of the article and the place it takes in the field and in its general development. Thus one section of the series would be devoted to anatomy, others to physiology, biochemistry, pathology, etc. until the basic texts were made easily available for each subject of medical instruction. The articles chosen need not be old. Recent important papers—classics of tomorrow—that every student should read could be included in the series. There is a great difference between reading a paper at the library and possessing it. In the course of time other sections could be added intended primarily for practitioners, for historians, or for students of the humanities and social sciences.

The individual booklets should not cost more than $0.25, less than two packs of cigarettes. They should be on sale at the library, in the departments, at the student bookstore, at the corner drug store, wherever students go in the course of the day. Thus it would become possible gradually to build up a kind of "Modern Library" of medicine which, I have no doubt, would enrich medical education and would be a source of inspiration to all groups of the medical profession and to others.

Since it is very unlikely that anybody will give me $10,000 for such a purpose, I will continue to recommend whatever classics we have available today and our Institute will continue to publish a few texts from time to time whenever conditions permit it.

Reading over what I have written, I am disturbed to find that my article sounds very much like a sales talk, as if I were trying to "boost" the sale of our Institute classics. I need not tell that our department has no financial stake in these books. They are produced at little cost and returns, while not unwelcome, are hardly expected. Of course, we would like to see these books widely read, but sales will not influence our policy. If we never sold more than five copies we would still continue to publish classics because they must be available, and because the few copies sold may exert a decisive influence on a few students who may become the medical leaders of tomorrow.

PREVENTION AND CONTROL OF COMMUNICABLE DISEASES IN EARLY MICHIGAN

EARL E. KLEINSCHMIDT

> A people that fully grasps the idea that half of their sickness and half of their deaths may be prevented or avoided as truly and as really as they may prevent the destruction of their crops by cattle, by proper fencing, has taken a long stride in state medicine.
>
> Prof. ROBERT C. KEDZIE, 1878.[1]

Efforts to bring about a better understanding of prevailing communicable diseases in Michigan had their beginning about the middle of the 19th century. From available accounts of this period, it is learned that the first organized attempt made by the physicians of the State to better control these diseases took place in 1854 at the second annual meeting of the State Medical Society at Ann Arbor.[2]

On this occasion Dr. M. A. Patterson, Committee on Epidemics, recommended the adoption of the following resolution:

> Resolved, That the Society shall be a "Committee of the whole" on Epidemics, and each member is hereby required to keep a record of such epidemics as may prevail under his immediate observation, carefully noting their special peculiarities and treatment, and annually transmit an abstract of his observations to the President of the Medical Faculty of the University of Michigan, in season for said Faculty to condense the information thus obtained, giving each practitioner credit for details furnished and to present the same in the form of a Report to the Society at each annual meeting, and that to ensure the response of the profession, the Faculty be requested to send a circular to various parts of the State, asking information on epidemic and endemic diseases, and the success of the treatments instituted.
>
> Resolved, That a Committee be appointed to wait upon the members of the Medical Faculty of the University, and report whether said Faculty will perform the duty requested of them by the above resolution.[3]

On motion the report was accepted, and the resolution was passed by a unanimous vote. Faculty members present readily agreed to undertake the task. During the same meeting, Prof. A. B. Palmer of the Medical Department of the University offered a resolution requesting the medical faculty to forward to the Committee on Epidemics of the National Medical Association the information on epidemics secured from members of the State Society. This was also adopted.[4]

[1] *Am. Rep. S. B. H.*, X, 4.
[2] *Pen. J. Med.*, I (1854), 492.
[3] *Loc. cit.*
[4] *Loc. cit.*

In the September number of the *Peninsular Journal of Medicine*, there appeared the following circular requesting all physicians in the state to return appropriate answers to Prof. A. Sager by the first of January, 1855:

1. What epidemics have come under your observation during the years 1851-51-53 and 54?
2. When did they commence and how long did they continue?
3. In what place did they prevail and how widely were they extended?
4. What was the weather before they commenced, during their progress, and at the close? (State particularly respecting humidity and heat.)
5. What were the symptoms and course of the diseases? (Please describe carefully, and illustrate by cases.)
6. What modes of treatment were adopted and what success attended each?
7. What was the percentage of mortality as near as can be estimated?
8. Did the epidemic which you describe break out in a healthy community, or was it preceded by some other prevailing disease?
9. When it subsided did it simply grow milder and disappear, leaving the community healthy or did it merge into some other complaint?
10. What is the face of the country, the climate, the character of the water, and the condition as to forests, clearing, and density of population in the region where the disease prevailed?
11. Were all persons indiscriminately attacked? Or was there a difference observed in the liability of foreigners (state the nation) or natives, children or adults, males or females, or between the races whites, blacks, and Indians?
12. Please detail any other interesting circumstances which may have been observed, if calculated to throw light on the subject.
13. Were there any evidences of the contagious character of cholera where it prevailed?
14. Was there any connection observed between the kind of water used for drink and the prevalence of cholera? Also how much was to be attributed to filthy living and imprudence in eating?
15. Of ordinary diseases not epidemic what prevail most in your region and what least?
16. What information can you give respecting the effect of climates, soil, cleaning up forests, etc., upon them?
17. What variations in kind or frequency, do you observe in them, among the different races of whites, Indians, and Negroes?
18. During your residence at or near your present location, have you observed from year to year any gradual tendency among all diseases, to change their type, so as to be now either more typhoid or more sthenic than formerly, or to require more tonic or more depletory treatment?[5]

In the October number of this same journal, still another circular appeared requesting physicians of the state to answer eight questions

[5] *Pen. J. Med.*, II (1854), 111.

relative to the prevalence of dysentery in the state. This information was sought by Dr. Henry Taylor of Mt. Clemens, Chairman of a Committee of the American Medical Association on Epidemics. The questions asked referred principally to the occurrence, nature, fatality rate, treatment used, and atmospheric conditions surrounding outbreaks of the disease [6]

At the regular meeting of the State Medical Society in 1855, a member of the medical faculty of the University of Michigan presented a summarized report of the epidemiological data supplied by physicians of the state in response to the aforementioned circular. As far as it is possible to ascertain from available accounts, no special comment was made on this report.[7] In the years which followed until the beginning of the Civil War, similar reports were read at these meetings. In addition, individual reports were made by other physicians in the state, notably by Dr. Zina Pitcher, and Dr. J. H. Beech of Coldwater. Dr. Beech made it a regular habit for a number of years.[8] At the fourth annual meeting of the Society, he presented his observations in tabular form as follows: 1. The monthly proportion of Acute Diseases, 2. Percentage of Several Diseases for each month as observed at Coldwater, Mich., and 3. Reports of Death in Coldwater, Mich. in 1855 from Cemetery Records according to age.[9] In 1859, at a similar meeting of the Society, Dr. J. Adams Allen stated in the course of his presidential address, "We need a careful chronicle of their visits (referring to the communicable diseases) and peculiarities from every part of the state. Isolated reports are comparatively valueless." [10]

Soon after the close of the Civil War, the Michigan State Medical Society ventured to carry on the work which had been previously begun. At the initial meeting of the Society on June 5, 1866, two committees were appointed, one on "Epidemics," [11] and the other on "Zymotic Diseases." [12] To the former were named Drs. DeCamp of Grand Rapids, Cornell of Ionia, and Mitchell of Saginaw. To the latter, Drs. J. H. Brown of Detroit and E. P. Christian of Wyandotte were appointed. Local and district medical associations, so the records reveal, appointed similar committees.[13]

[6] *Ibid.*, p. 188.
[7] *Ibid.*, p. 491.
[8] *Pen. and Ind. Med. J.*, I (1858), 143.
[9] *Pen. J. Med.*, III (856), 495.
[10] *Reports*, M. S. M. S., I (1859), 20.
[11] *Det. Rev. Med. and Pharm.*, I (1866), 191.
[12] *Loc. cit.*
[13] *Loc. cit.*

Plan Established by State Board of Health

Shortly after the State Board of Health was established in 1873, Dr. Henry B. Baker, its secretary, was authorized to collect information pertaining to the prevalence of communicable diseases in the State. In October, 1873 he sent out the first circular of inquiry, together with blanks to the physicians of the state requesting them to notify clerks of local boards of health of the prevalence of diseases dangerous to the public health. Another circular very similar to this one was sent to all clerks of the local boards of health requesting their cooperation in the project. Significantly enough, the sending out of circulars two and three represents the pioneer effort of the State Board of Health to collect morbidity statistics.[14] At the end of every three months thereafter, Secretary Baker sent blanks for the clerks of the local boards of health requesting of them a special report on prevailing diseases. In addition, an annual report of prevailing diseases was also asked for at the end of the fiscal year.[15]

Another plan for securing statistics relative to prevailing diseases was offered by Dr. H. O. Hitchcock at a meeting of the Board on April 13, 1875. At his recommendation arrangements were made for securing a corps of correspondents for the Board, who would supply such facts as might be required to further its work.[16] Dr. Baker was subsequently authorized to carry out the plan adopted. On April 13, 1875, he sent out a circular requesting the assistance of all the physicians of the state in the project.[17] Over one hundred of them expressed an earnest desire to aid in the work of the Board, many of them being leading members of the medical profession. Quite a large number of others, however, failed to reply.[18]

In December of the same year, Dr. Baker despatched the following circular to those physicians who had expressed a willingness to cooperate in this project:

Office of the State Board of
Health, Lansing, Mich.
December, 1875.

To the Correspondents of the State Board of Health,

Gentlemen: — This Board desires to have, and to place upon record for purposes of future study in connection with records of deaths and of meteorological conditions, statements, for as many different localities in the State as possible, of the

[14] *An. Rep.* S. B. H., I, 11.
[15] *Loc. cit.*
[16] *Ibid.*, III, xii.
[17] *Ibid.*, p. xviii.
[18] *Ibid.*, V, xii; *ibid.*, IV, xv.

diseases prevailing during the year 1875. Will you have the kindness to send, as soon as after December 31, 1875 as is convenient, to the office of this Board at Lansing, your replies to the following questions? Please use the stamped envelope enclosed herewith, and leave all additional postage to be paid at this office. In replying it will not be necessary to repeat the questions, but simply to refer to the Circular and each question by number. Please define the locality for which your replies are made.

1. Among the people of your locality, and considering the increase or decrease of population, was the proportion of sickness from all causes during the year ending Dec. 31, 1875, greater, less, or about the same as the average during the previous years? If not the same, how much was it decreased or diminished?
2. Compared with previous years, and from all causes, was the proportion of deaths to inhabitants during the year 1875, greater, less, or about the same as the average? If not the same how much was it increased or diminished?
3. What diseases, or causes of death, have been more than usually prevalent during the year 1875?
4. What diseases, or causes of death, have been less than usually prevalent?
5. From what diseases or causes has there been more than the usual mortality during the year 1875?
6. From what diseases or causes has there been less than the usual mortality?
7. State number of cases of small-pox, cholera, scarlet-fever, typhoid fever, measles, whooping cough, cerebro-spinal meningitis, diphtheria, and of any epidemic, endemic, contagious or infectious disease that has appeared. (Facts are especially desired, but opinions are better than no statements, though it will be well to state them as opinions.)
8. Of such diseases, name those of which no case has appeared during the year 1875.
9. Please give a summary statement of the diseases which have prevailed in each month of the year 1875.
10. Please mention dates of the occurrence of any disease not usually occurring in your locality and of any attended with an unusually high or low rate of mortality.
11. What diseases are prevailing at the time you send this statement?
12. Are any diseases now especially or unusually prevalent or fatal? If so, what diseases and to what extent?
13. What diseases have prevailed, and to what extent, among animals?
14. What diseases have prevailed, and to what extent, among the crops, as of potatoes, hops, fruits, and especially cereals and grasses, whether affected by rust, smut, "bunt," mildew or mould?
15. As regards rye, oats, corn, buckwheat, and other grains, wheat in particular, it is desired to ascertain the actual condition when ready for market or use. Were any of these affected by any kind of fungus?
16. Was the wheat generally allowed to get thoroughly dry before it was threshed?
17. Do the wheat buyers or millers say that wheat this year is more or less than usually liable to "bank" in the bin?

18. Was the hay crop, secured during the past season, more or less than usually affected by mildew or mould?
19. Please give a summary statement of the meterological conditions during the year 1875, specifying, if possible, the general characters for each month, and noting any peculiar or unusual conditions?
20. Please communicate facts bearing upon, or cases illustrating the causation or communicability of diseases.

* * * * * *

By direction of the State Board of Health.

Very respectfully,

HENRY B. BAKER, Secretary.[19]

To this circular, twenty-nine replies were received from twenty-six different localities in the state.[20] The information thus secured was compiled by Dr. Baker and printed each year in the annual reports which followed. Apparently well aware of the deficiency of the system as first devised, Dr. Baker wrote in the first compiled report for the year 1875 that, "as the system is continued, the observers will each year become more and more prepared to lessen the number of cases requiring estimates, and to increase the number of statements of facts."[21]

In the years which followed, correspondents supplied the Board with much valuable information. "This corps of correspondents," said Dr. Baker in 1877, "contributes more and better information on the subject of health and disease than any other class of men in the state, and this is the more praiseworthy because it is done gratuitously. Much of the valuable work of this Board depends upon their action. They are looked to for facts concerning the physical conditions in their several localities, the diseases of different seasons of the year, and in different years, the study of special diseases and their causes, unsanitary conditions generally, and to supplement the information supplied by local health officers concerning the rise and progress of, and other facts relating to, epidemics and outbreaks of communicable diseases."[22]

Circulars issued the following years were in most respects similar to the first, Circular No. 11. A few changes, however, were made in 1876, 1880, 1881, 1883, and 1884. Nine additional questions were asked of correspondents in 1876 in Circular No. 15.[23] Circular No. 38, issued in 1880, asked a new question relative to the influence of schools in spread-

[19] *Ibid.*, IV, 152; *ibid.*, V, 233.
[20] *Ibid.*, IV, 144.
[21] *Ibid.*, p. 143.
[22] *Ibid.*, V, xxiv; *ibid.*, VI. lix.
[23] *Ibid.*, V, 186.

ing contagious diseases, and questions relating to yellow fever were omitted since the disease no longer threatened the state;[24] in 1881, the circular (No. 40) asked several additional questions, these concerning the relation between the closing of schools and the decrease of communicable disease, the means of communicating scarlet fever and diphtheria, the prevalence of hog cholera, among hogs and other animals as well as sickness caused by the eating of pork from choleraic hogs, and the spread of the disease to man by inoculation or other means.[25] Circular No. 59 sent out in 1883 asked additional questions concerning hog cholera. In addition, inquiry was also made relative to the estimated death-rate in Michigan over the period 1877-81.[26]

Beginning with a total of twenty-nine, the number of Board correspondents increased rapidly.[27] In 1880, it was reported by Dr. Baker that the total number had increased to one hundred and fifty-four.[28] In 1882, one hundred and seventy-one physicians consented to act in the capacity of correspondents.[29] Each year the Board, as part of its regular business, approved of the addition of new correspondents.[30]

Besides supplying the State Board of Health with answers to the annual blanks sent out to ascertain prevention of diseases dangerous to the public health, the correspondents were also appealed to for special reports of disease outbreaks, and other problems of interest to state health authorities. All data thus secured was compiled in the annual reports of the Board.[31]

Weekly Reports of Prevailing Diseases

Evidently much impressed by a plan for securing weekly reports of diseases, which had been previously tried by the Massachusetts State Board of Health, Dr. Baker presented a similar plan for consideration at the regular meeting of the Board on July 11, 1876.[32] This plan called for weekly reports of a specified group of diseases "dangerous to the public health" printed on postal card blanks especially devised for that purpose. These reports were to be asked of all correspondents and city health

[24] *Ibid.*, p. 223.
[25] *Ibid.*, IX, 252.
[26] *Ibid.*, XI, 12; *ibid.*, p. 1.
[27] *Ibid.*, IV, 143.
[28] *Ibid.*, VIII, xviii.
[29] *Ibid.*, X, xii.
[30] *Ibid.*, VII, xvii; *ibid.*, IX, xvi.
[31] *Ibid.*, VI, xx; *ibid.*, XII, 56; *ibid.*, XI, xii.
[32] *Ibid.*, IV, xxxvii; *ibid.*, p. xxvi; Dr. Baker used the powers implied in Sec. 8, Act No. 81, laws of 1873 to secure weekly reports of prevailing diseases from health officers of the state. This law gave the State Board of Health the power to require special reports of Health officers (*ibid.*, p. xxxix).

officers of the state. From available accounts it is learned that the plan was favorably received by the members of the Board and adopted.[33] Dr. Baker was authorized to proceed at once with the work of setting up the details of the plan.[34]

At the launching of the plan on September 1, 1876, facts were collected regarding nineteen of the most important causes of sickness. Physicians and health officers were asked to report not only the cases seen by them, but also those seen by other physicians in the community. Reports were made out in duplicate by the local health officer, one copy being kept by him and the other returned to Lansing.[35]

The first weekly reports of prevailing diseases in the state were received for the week preceding Sept. 9, 1876.[36] During the first month, twelve health officers and forty correspondents turned in reports.[37] According to McClure, "The average number of cards received each week for a series of years was about sixty."[38] At the beginning of January, 1877, so the records inform us, many of the health officers of cities were not complying with the demand for these weekly reports.[39]

Once each year, there was distributed to the observers of diseases, a number of postal cards and blank record books sufficient for a year. In 1877, it is recorded that 3,900 such blank postal cards for weekly reports, and 300 blank record books were printed and distributed about the state.[40]

In 1878, five additional diseases were added to the original list on the post cards; namely, consumption, remittent fever, typho-malarial fever, neuralgia and tonsillitis, thus increasing the total number of reportable diseases to twenty-four.[41] In 1883, "inflammation of the kidney" was first added to the blank,[42] and by 1884, the list had been increased to include twenty-seven diseases.[43]

[33] *Ibid.*, IV, xxvi; according to MacClure, "The system was modelled after that devised in England by Benjamin Ward Richardson, M. D., LL. D., and copied by the Massachusetts State Board of Health; in each of which instances the attempt was short lived" (*Quart. Cent. P. H. Mich.*, I, 19).

[34] *Ibid.*, VIII, xxxviii.

[35] *Ibid.*, IV, xxxviii; *ibid.*, X, 513; *ibid.*, IX, 305; MacClure, *op. cit.*, p. 20.

[36] *Ibid.*, IV, xlii.

[37] *Ibid.*, p. xlvi.

[38] MacClure, *op. cit.*, p. 20.

[39] *An. Rep.* S. B. H., V, xxvi.

[40] *Ibid.*, p. xxv; *ibid.*, IX, 305; *ibid.*, VI, 253; *ibid.*, VII, xvi.

[41] *Ibid.*, VI, 256.

[42] *Ibid.*, XIII, 88.

[43] *Ibid.*, XII, 196.

As first set up, the system was not clearly understood by a large number of correspondents and health officers.[44] Consequently efforts were necessary on several occasions to assure greater uniformity in the manner of reporting diseases. The original plan was carefully studied, criticized and rewritten by Dr. Baker, and in October, 1877, he sent out a letter to all observers, setting forth specific directions for filling out the postal card blanks including the changes which it seemed necessary to make.[45] Beginning November, 1881, village health officers were requested to supply the State Board of Health with similar reports.[46]

Despite the efforts of the Board to increase the accuracy of the system, errors nevertheless resulted because of poor reporting, and also because of the admittedly inexact method of approximating the number of cases of disease in a community. During the months of June and July of 1883, observers failed to send in weekly reports of any kind. Some stated that there was no sickness to report; others simply discontinued sending reports because of the healthful condition of their communities. This interruption in reports occasioned a warning letter from Dr. Baker in which he pointed out to these delinquent observers that "it is just as important, for the purpose of learning the causes of sickness from any diseases as to know when there is much sickness from that disease."[47]

Beginning in May, 1885, the method of securing weekly reports was slightly changed by the State Board of Health.[48] As described. the card reporter was requested to include in the report only the cases of sickness under his own observation without regard to area, instead of as previously secured.[49] The details of the plan were explained to health officers and correspondents in Circular No. 94.[50] Following the change, it is asserted, a marked decline in the number of reports of sickness occurred. Some health officials were of the opinion that this was due in part to the sanitary work done in the state as a result of the cholera scare.[51] Dr. Baker, however, was most enthusiastic over the results noted in the office of the Board. "This change," he said, "will place these statistics on a still firmer scientific basis."[52]

[44] *Ibid.*, V, 239.
[45] *Loc. cit.*; *ibid.*, p. 240.
[46] *Ibid.*, X, 513.
[47] *Ibid.*, XI, 198; *ibid.*, V, xxvi.
[48] MacClure, *op. cit.*, p. 20; *An. Rep.* S. B. H., V, 239; *An. Rep.* S. B. H., XI, 197.
[49] *An. Rep.* S. B. H., XIII, xxxii; *ibid.*, p. 87; *ibid.*, XIV, 83.
[50] *Ibid.*, XIII, 89.
[51] *Ibid.*, p. 191; *ibid.*, XIV, 83.
[52] *Ibid.*, XIII, 88.

Reporting of Diseases Dangerous to the Public Health

One of major difficulties encountered by the State Board of Health in its endeavor to perfect a system for recording the prevalence of disease, lay in the refusal of physicians and householders to comply with the law requiring the reporting of disease. This condition prevailed despite repeated warnings from Dr. Baker and local health officials.

A law covering the offense was originally placed on the statute books in 1871. Section 1735, Compiled Laws of 1871, reads, "Whenever any physician shall know that any person whom he is called to visit is infected with the small-pox, or any other disease dangerous to the public health, such physician shall immediately give notice thereof to the board of health or health officer of the township in which such diseased person may be; and every physician who shall refuse or neglect to give such notice shall forfeit for each offense a sum not less than fifty nor more than one hundred dollars."[53] Section 1734 of the law provided a similar penalty for householders.[54] Section 13 of the law made it the duty of every township officer to give notice of such failure to obey the law to the supervisor, who in turn was given the right to prosecute "for all failures to report sickness in his township" (Section 1734 and 1735 as amended by the laws of 1883).[55] Act No. 157, Laws of 1879, likewise made it the duty of every health officer of a village or city to give notice to the prosecuting attorney of the country of any failure of householders or physicians to report cases of communicable diseases to the local health officer or local board of health.[56]

To obviate any misunderstanding of the laws, the State Board of Health had them printed on the reverse side of the blanks used for reporting communicable diseases. Originally the Board supplied these blanks gratis to physicians and householders,[57] but at a meeting on Jan. 9, 1883, it was recommended that local boards of health supply these blanks themselves to the physicians within their jurisdiction.[58]

Physicians were repeatedly exhorted to comply with the law requiring the reporting of contagious diseases. On the occasion of the fifteenth annual meeting of the State Medical Society in 1880, Dr. Hitchcock of

[53] *Ibid.*, I, 11.

[54] *Loc. cit.*

[55] *Ibid.*, XI, 70.

[56] *Ibid.*, VII, 272. Acting on the suggestion of Dr. H. H. Shaberg of Kalamazoo, the State Board of Health distributed a circular to the physicians of the State in 1886 relative to the reporting of disease.

[57] *Ibid.*, XI, 70; *ibid.*, I, 13; *ibid.*, VII, 263.

[58] *Ibid.*, XI, xxxiii.

the State Board of Health said, "I appeal to the members of this Society who are or may be health officers to see to it that full and reliable statistics are furnished the State Board by their annual reports and then to demand that those reports be 'studied and made profitable use of' in compliance with the law."[59] About the same time the Prosecuting Attorney of Kent County placed the following communication in the newspaper, the *Lansing Republican:*

Physicians, OBEY THE LAW

To the Editor of the Republican:

I desire to call to the attention of all physicians in this county section 1735, Vol. I., compiled laws of this state, which makes it the duty of all physicians to report to the health officers of their localities all cases of contagious diseases which they are called upon to treat. The prevalence of diphtheria and scarlet fever in different localities requires that all the regulations calculated to prevent the spread of diseases should be rigidly enforced, and I shall feel called upon to see that it is done, so far as my duty in the premises is concerned.

Edward Cahill
Prosecuting Attorney[60]

Lansing, Dec. 23, 1879.

Evidently much impressed by the significance of this notice, Dr. Baker had reprints made and sent to all prosecuting attorneys in the state.[61]

That physicians of the state were not unmindful of the law, is demonstrated by an event which took place in 1883. Believing that the work associated with the reporting of diseases was deserving of public notice, about one hundred Detroit physicians drew up a petition and presented it to the legislature asking that they be compensated for the work of filling out morbidity reports.[62] Apparently sympathetic with the views of this group of physicians, Dr. Baker, at a meeting of the State Board of Health, subsequently presented a proposed bill amending sections 1734 and 1735, compiled laws of 1871, to mention explicitly diphtheria and scarlet fever, and adding a section to provide for compensation of physicians for such notices.[63] As far as it is possible to ascertain from a perusal of available sources, nothing was ever done about either of these petitions.

However difficult the securing of reports of diseases may have been, the fact remains that the work which was done was of a very creditable nature.[64] A pioneer in this work, the Michigan State Board of Health was in 1881 the only Board making a systematic collection of statistics

[59] *Trans.* M. S. M. S., VII (1876), 532.
[60] *An. Rep.* S. B. H., VIII, lxxxv.
[61] *Loc. cit.*
[62] *Ibid.*, XI, xxxv.
[63] *Ibid.*, p. xxxiii.
[64] *Ibid.*, XIV, 181.

of sickness.[65] Speaking of the Michigan system of sickness statistics in 1898, McClure said, "For importance and usefulness the Michigan Sickness Statistics are second to none in the world."[66] So successful was the State Board of Health in this work that Dr. Baker was able to say in 1884, "This is a difficult undertaking, which is not yet being accomplished in any other State or country so successful as it is done in Michigan for it can be truthfully claimed that the time of year of greatest danger from most of the important diseases has been learned for this state; and not only this, but the meteorological and other conditions which are coincident with these times of greatest danger have also been learned for several of the diseases which cause most sickness in Michigan."[67] Obviously jubilant over the response which physicians and health officers had made, Dr. Baker wrote in the annual report for 1877, "The truth is that the painstaking care and the zeal and enthusiasm with which the Observers of Diseases have performed the labor incident to this work, has been very gratifying, and the reports have been expected; these facts have established the practicability of securing reliable weekly reports of diseases."[68] Not alone did the cooperation given the Board succeed in producing worthwhile statistics; it also enabled the State Board of Health to direct its attention to various parts of the state where diseases were most prevalent and bring about the necessary measures for their restriction and control.[69]

Selection of Diseases Dangerous to the Public Health

The selection of diseases dangerous to the public health was left entirely to the State Board of Health by the legislature.[70] After proper deliberation on the subject, the Board decided from time to time those diseases which they considered to be "dangerous to the public health" in accordance with provisions of the law of 1871 which created the Board.[71] In 1873, measles, whooping cough, scarlet fever, typhoid fever, smallpox, and cholera were placed on this list. Diphtheria was added in 1875; puerperal fever and erysipelas in 1878; typhus fever in 1879; and German measles in 1886.[72]

[65] *Ibid.*, IX, 112.
[66] MacClure, *op. cit.*, p. 19.
[67] *An. Rep.* S. B. H., XII, 197; *ibid.*, XIII, 88.
[68] *Ibid.*, V, 247.
[69] *Ibid.*, IX, 112.
[70] MacClure, *op. cit.*, p. 20.
[71] *Ibid.*, p. 21.
[72] *Loc. cit.*

Special Reports of Outbreaks of Communicable Diseases

The passage of Act 137, Laws of 1883, required local health officers to keep the secretary of the State Board of Health constantly informed with respect to every outbreak of a disease dangerous to the public health.[73] Prior to 1883, however, Secretary Baker had requested special reports of outbreaks of diseases from clerks of local boards of health, but from available accounts, it is learned that they frequently ignored his requests for information.[74] In order to facilitate matters, a blank form (K) was sent out for the first time on Nov. 29, 1882, for a final report of an outbreak of disease.[75] Blank forms (M) for weekly reports during the continuance of the disease, and a circular (63) explaining the use to be made of the blanks were first sent out in May, 1883, to all health officers, and to presidents of boards where no health officers existed.[76] Thereafter, whenever it was brought to the attention of the office of the State Board of Health that an outbreak had occurred in a community, a letter was promptly sent to the health officer or president of the board calling his attention to the office of the State Board of Health that an outbreak had occurred in a community, a letter was promptly sent to the health officer or president of the board calling his attention to the existence of the disease.[77] In addition, there was enclosed a circular (No. 64) which gave an outline of the duties of the health officer of the local board of health in restricting the disease. Copies of documents on the restriction and prevention of the disease concerned were also included. In addition, a request was made for a final report of the outbreak. According to MacClure, an account of each outbreak of disease was opened at the office of the Board as soon as word reached Dr. Baker of its occurrence.[78]

The passage of Act No. 56 in 1877 (an amendment to sections 1692 and 1693, chapter 46 of the compiled laws of 1871) brought about several improvements in local health service. Of the greatest importance, undoubtedly, as concerns the control of communicable disease, was the mandatory requirement that compelled township, village and city boards of health to appoint health officers, and at the same time to report this appointment to the State Board of Health.[79] To assist in carrying out this provision of the law, beginning in August, 1877, a circular was sent

[73] MacClure, *op. cit.*, 21.
[74] *An. Rep.* S. B. H., IV, xxxvi.
[75] *Ibid.*, XI, 80; *ibid.*, p. 254.
[76] *Ibid.*, XI, 81; *ibid.*, XII, 253.
[77] MacClure, *op. cit.*, 21.
[78] *Ibid.*, p. 22; *An. Rep.* S. B. H., XI, 81; *ibid.*, p. xi.
[79] *An. Rep.* S. B. H., V, xix.

each year to the officials of all cities and villages in the state transmitting blank forms for the return of the names and addresses of local health officers.[80] As rapidly as these were received, a document detailing their duties was sent to the local health officers together with blanks and copies of a document on the prevention and restriction of diphtheria, scarlet fever, typhoid fever, and smallpox.[81] In cases where information regarding the local health officer was not returned, these documents on the restriction and prevention of diseases were sent to the president of the Board of Health for the health officer.[82]

The majority of the cities, villages and townships gave the State Board of Health excellent cooperation in carrying out the provisions of Act No. 56. In several instances health officers were appointed where none existed before. The villages of the state, however, were generally the slowest to respond.[83] In 1879, Dr. Baker wrote, "Every city in Michigan except the newly chartered city of Mt. Clemens, returned the name and address of a health officer; and in every city, except Bay City, the health officer appointed was a physician, as the law requires.[84] In 1878, only eight hundred and fifty-five health officers were returned from all the townships, cities and villages of the state.[85] In 1882, the number had increased to one thousand seventy-nine;[86] and by 1883 responses were had from nine hundred and twenty-six townships, one hundred and forty-six villages and forty-one cities, totalling one thousand one hundred and thirteen.[87] As soon as the list was compiled each year, it was printed and a copy sent to each local board of health.[88]

The sending out of documents on the restriction and control of communicable diseases by the State Board of Health was well received by most of the health officers and people of the state. Teachers of physiology and hygiene used large quantities of them in their classes in the public schools.[89] Because of the presence of a large number of people in the state who were unable to read the English language, the Board was requested by local health officers to print them in the Swedish, French, German, Holland, and Polish languages.[90] In the fiscal year ending Sept. 30, 1885, the number of copies of the several documents sent to local health officers and others reached a total of 75,000.[91]

[80] *Ibid.*, p. xx.
[81] *Ibid.*, XIII, xvi; *ibid.*, XIV, x.
[82] *Ibid.*, XII, xvi.
[83] *Ibid.*, V, xxiii; *ibid.*, VII, xii.
[84] *Ibid.*, X, xi.
[85] *Ibid.*, VI, xx.
[86] *Ibid.*, X, xi.
[87] *Ibid.*, XI, xiv.
[88] *Ibid.*, XIII, xxxv.
[89] *Ibid.*, XII, xvii; *ibid.*, XIII, xii.
[90] *Ibid.*, XII, xxxiv.
[91] *Ibid.*, XIII, x.

The distribution of documents on the prevention and restriction of scarlet fever was begun at the suggestion of Dr. Baker in May, 1876.[92] Prior to this, however, a circular (No. 2) had been distributed by the Board to clerks in 1873 calling their attention to the great number of deaths from the disease in the state, and recommending means by which it was believed this number could be reduced.[93] After 1876 regular distribution of these documents was made to all local health departments.[94] The distribution of a revised copy began in December, 1881.[95] The number distributed varied greatly from year to year depending on the extent of the disease. In 1877, 20,000 copies were distributed over the state.[96] In 1884, 10,000 copies were sent in small lots to the different localities where scarlet fever prevailed.[97]

Documents on the prevention and restriction of diphtheria were prepared in October, 1878, distribution being made to health officers, members of local boards of health, correspondents of the Board, physicians, editors, teachers, and other persons interested in the subject.[98] Distribution was continued annually thereafter. In 1878, 20,000 copies were distributed about the state;[99] in 1880, 20,000 copies;[100] in 1885, 10,000 copies.[101] It was customary to have these documents first prepared by the committee on epidemics and contagious diseases, following which they were approved by the Board before distribution.[102]

The distribution in quantities of documents on the prevention and restriction of smallpox was begun by the Board in May, 1882.[103] Prior to this, in 1887, a leaflet containing a resolution of the Board relative to vaccination against smallpox, together with the name and address of the person from whom bovine virus could be secured, had been distributed over the entire state.[104] In 1881, a fifteen-page document on the "Prevention and Restriction of Smallpox" was issued by the Board for a limited distribution.[105] Because of a smallpox outbreak in the western part of the state in 1884, seven hundred of these pamphlets were sent out by the Board, translated into the German and Holland languages.[106]

Owing to the threatened danger of cholera in 1884, the Board undertook to distribute over the entire state 12,000 copies of the document on

[92] *Ibid.*, XI, 80; *ibid.*, IX, 173; *ibid.*, IV, xxiv.
[93] *Ibid.*, V, 393.
[94] *Ibid.*, XIV, 178.
[95] *Ibid.*, XI, 81.
[96] *Ibid.*, V, lix; *ibid.*, V, 394.
[97] *Ibid.*, XII, 277.
[98] *Ibid.*, XI, 80; *ibid.*, XII, 252.
[99] *Ibid.*, VI, lix.
[100] *Ibid.*, VIII, xlviii.
[101] *Ibid.*, XIII, 252.
[102] *Ibid.*, VI, xxxiv.
[103] *Ibid.*, XI, 81; *ibid.*, XII, 253.
[104] *Ibid.*, IX, 174.
[105] *Ibid.*, p. 289.
[106] *Ibid.*, XII, 282.

the prevention and restriction of this disease.[107] A similar document, "Cholera in its relations to Railroads," prepared by Secretary Baker, was distributed to all railroad officials in the state with an order directing that its instructions be complied with.[108]

In addition to the distribution of prepared documents on the prevention and restriction of disease, frequent recourse was made by the Board to the distribution of circulars of inquiry to the correspondents of the Board. These were generally made by the Committee on Epidemics in order to get a consensus of opinion from members of the medical profession relative to rules for the prevention and restriction of the disease concerned.[109]

On April 11, 1876, on motion of Dr. Baker, Dr. Arthur Hazlewood, Committee on Epidemic Diseases, was asked to prepare a set of instructions for the prevention of scarlet fever. A circular (17), prepared shortly afterwards, containing sixty-six questions, was sent to the correspondents of the Board.[110] To this, thirty-one of them replied.[111] From the data thus supplied, Dr. Hazlewood constructed a document on the prevention and restriction of scarlet fever which in turn was approved by the Board and ordered distributed beginning in May of the same year.[112] Again in 1883, another circular of inquiry was sent out by the Board to ascertain facts concerning the introduction and communicability of scarlet fever in communities.[113]

The Board's efforts in the control of scarlet fever were most extensive, and the sources declare that the results obtained were gratifying. According to Dr. Baker, the deaths from scarlet fever in the period 1873-1885, as reported to him, were reduced in the aggregate about one-fourth, notwithstanding the increase in population.[114] Putting it in another way, he said, "There were 338 lives saved per year from scarlet fever, or 3,718 lives saved from death during the first 11 years after the State Board of Health was established."[115]

At the suggestion of members of the Board, Dr. J. H. Kellogg, Committee on Epidemics in 1882, was asked to investigate more thoroughly the extent of diphtheria and conditions surrounding its occurrence in the United States, and in Michigan particularly. In response to this request, he devised a circular of inquiry which was distributed to several hundred physicians in various parts of the United States.[116] Another somewhat

[107] *Ibid.*, p. xvi.
[108] *Loc. cit.*
[109] *Ibid.*, IV, xxiv; *ibid.*, V, 393.
[110] *Ibid.*, p. 394.
[111] *Ibid.*, p. 397.
[112] *Loc. cit.*
[113] *Ibid.*, XI, 16.
[114] *Ibid.*, XIV, 179.
[115] *Ibid.*, p. 178.
[116] *Ibid.*, XI, 48.

similar study was made in 1883 of the "Distribution of the deaths reported from Diphtheria, by counties in Michigan for the years 1876-1882" by Rev. L. Delamarter with the cooperation of Dr. H. B. Baker.[117]

Warnings relative to the prevalence of smallpox were repeatedly sent by the State Board of Health to local boards of health whenever the disease made its appearance in the state.[118] In addition, circulars were also sent to physicians urging them to comply with the provisions of the law requiring the reporting of the disease to the local health officer.[119]

The control of typhoid fever was apparently paid little attention by the State Board of Health until about 1882. At a meeting of the Board in that year, Dr. Lyster read a paper on "What is known of Typhoid Fever."[120] A series of outbreaks of the disease in 1883 at the State Reform School in Lansing led the Board to communicate with local boards of health immediately upon report of the occurrence of the disease. The plan for its control was adopted about October 1, 1884.[121] In 1886, an effort was made by the Board to secure a complete history of each outbreak of the disease. As soon as information reached the Board of its occurrence, a letter was sent to the local health officer urging prompt action to restrict the disease, and in addition, asking for weekly reports of progress. Pamphlets on the restriction and prevention of the disease were also included in the letter for distribution to the families and neighbors of the persons sick with the disease.[122]

Venereal diseases likewise came in for little attention by the Board. In October, 1881, in response to a request for enlightenment on the subject by members of the Board, Dr. Henry F. Lyster made a vigorous plea for the control of syphilis in the state declaring, "The only way to limit the spread of venereal diseases and the consequent exposure of thousands of innocent people is by enlightening the community upon the nature, history, and consequences of these diseases, and particularly syphilis, and by official registration and examination of prostitutes, and detention of those found to be diseased, and by the enactment of laws by which civil and criminal prosecution may be instituted by persons infected by venereal diseases in any of its forms."[123] Nothing had been done up to that time, according to Dr. Lyster, to limit prostitution.[124]

[117] *Ibid.*, VI, 111.
[118] *Ibid.*, XI, 104.
[119] *Ibid.*, p. xii; *ibid.*, XIV, xi.
[120] *Ibid.*, XI, xx.
[121] *Ibid.*, XII, 283; *ibid.*, XIII, 276.
[122] *Ibid.*, XIV, 232.
[123] *Ibid.*, X, 200; *ibid.*, VIII, xlv.
[124] *Ibid.*, IX, 199.

Animal Diseases

The attention of the State Board of Health was first drawn to the dangers of animal diseases transmissible to man by a communication received in April, 1874. A physician by the name of M. Northrup of Port Huron reported several cases of trichiniasis to Dr. Baker, one of which, he said, was fatal.[125] Again in 1879, various correspondents called the attention of the Board to the dangers of animal diseases to the public health. In consequence thereof, a committee on "Disease of Animals" was formed with Dr. Baker as its chairman.[126] His first report on "Glanders in Man and in Domestic Animals" is to be found in the Annual Report for 1879.[127] As the result of his efforts to prevent the introduction of animal diseases into the state, the governor in 1881 appointed a commission of three members under the provisions of an act originally passed in 1869 prescribing a commission for the prevention of the introduction into the state of contagious diseases among animals.[128]

With the appointment, in 1884, by the president of the United States of a special "Commission on American Pork" to investigate the prevalence of trichiniasis in the United States, the state Board of Health was called upon to supply information for this state.[129] In answer to the request, Dr. Baker reported that as far as he knew, ten outbreaks were all that had occurred in Michigan up to that time.[130] From his continued investigations Dr. Baker found that little was being done in the state to limit animal diseases. The law of 1869 (Act No. 153; Sections 1742, 1743, 1744, of the Compiled Laws of 1871), he found, provided for the appointment of three cattle commissioners to carry out the implications of the law, but failed to provide any allowance for their expenses. Consequently, as he pointed out, they failed to carry out the provisions of the law.[131]

In 1855, the attention of the State Live Stock Sanitary Commission was called to an outbreak of hog cholera by H. N. Cargill, clerk of the Grand Rapids Board of Health. Speaking of this epidemic, the Hon. H. H. Hinds, President of the Commission, said in response to an inquiry

[125] *Ibid.*, III, 33.

[126] MacClure, *op. cit.*, p. 25; Glanders was brought to the attention of the State Board of Health in 1879 and again in 1884. Two fatalities were recorded in 1879, one in Oakland County and the other in Wayne County. Both were traced to "Glandered" horses (*An. Rep.* S. B. H., XII, 12).

[127] *Ibid.*

[128] *An. Rep.* S. B. H., VIII, xl.

[129] *Ibid.*, XII, 1.

[130] *Loc. cit.*

[131] *Ibid.*, XII, 5.

from Dr. Baker, "We are at a loss to know what to do to stamp out this animal disease, because veterinary scientists have as yet laid down no rules for either its cure or control." He welcomes any aid the State Board of Health might give. Most of the diseased animals, it was discovered, existed in Barry and Eaton Counties.[132]

Similar outbreaks of other animal diseases were to increase the interest of the State Board of Health in the subject. In 1882, the death of a number of cattle at the state fair drew considerable attention.[133] Actinomycosis, "lump jaw," or "swellhead," as it was variously designated, was first introduced into Michigan in January, 1884, by way of Chicago.[134] Three car-loads of beef cattle sick with the disease were brought to Grand Rapids, but the clerk of the local board of health, quick to sense the imminent danger, immediately wrote Dr. Baker describing the situation. In his letter he stated that the butchers of the city had intended to place the meat upon the market for public consumption, but that the Board of Health had prevented them from doing so.[135] The owners of the cattle were apparently undismayed by this order, and took the cattle elsewhere. What happened to them is best explained in a letter Dr. O. W. Wight, Health Officer of Detroit, later wrote Dr. Baker:

Office of the Board of Health
Detroit; September 20, 1884

Henry B. Baker, M. D., Secretary State Board of Health, Lansing, Michigan.
Lansing, Michigan.

Dear Doctor,—The cattle sick with actinomycosis did not come under my jurisdiction. We traced them to a point a dozen miles west of Pontiac, where they were slaughtered, and the precious beef was carted in the night to a steamboat and shipped up the river, probably for consumption in some interior town of the state.

I gather evidence in every step of the case, except of the sale at the steamboat, intending to begin outside of my jurisdiction a State prosecution; but the attorney-general informed me that the missing link in the evidence would be fatal.

The scoundrels were so hotly pursued that they will not be likely to repeat the experiment.

Respectfully yours,

O. W. Wight, M. D., Health Officer.[136]

In consequence of these several outbreaks a member of the legislature, the Hon. Isaac Marston, called attention of a Committee of both branches of this body to the necessity for an appropriation to enable the State

[132] *Ibid.*, XIV, xlii.
[133] *Ibid.*, XI, xxx.
[134] *Ibid.*, XII, xxxvii.
[135] *Ibid.*, p. 6.
[136] *Ibid.*, p. 8.

Cattle Commission to do the work for which it was appointed.[137] Later three bills[138] were introduced into the legislature to accomplish this end, but a search of the records fails to show that any legislative action resulted.

Health Bulletins

As interest in the prevalence of communicable diseases became more widespread, it occurred to members of the State Board of Health that the Board should endeavor to place the information which they secured from weekly reports of diseases in the hands of the people. At a meeting on Oct. 11, 1881, the secretary was therefore directed to issue a weekly bulletin of sickness to such newspapers and medical journals as would publish the material.[139] This innovation was apparently well received by the newspapers, as the records indicate that some forty newspapers within the state and several outside of the state printed these bulletins regularly thereafter.[140] Reprints of the bulletins were sent to all observers of diseases, and to the sanitary journals and exchanges in the state.[141]

Beginning with August, 1884, a monthly bulletin was issued by the Board immediately after the close of each month for the use of monthly sanitary and medical journals.[142] This bulletin stated the prevalence of each of the twenty-seven diseases, the names of which were printed on the postal card blanks; it also included data regarding an increase or decrease of any disease in each month as compared with the preceding month, and as compared with the average of the corresponding month of the year since and including 1879. It also stated the temperature, humidity and ozone as recorded at a central station, as compared with years previous, stating whether these conditions were higher, lower, or the same as the average for each month.[143]

Annual Reports of Prevailing Diseases

"This is the first attempt to commence the important work of placing upon record the facts relating to the prevalence or absence of the prominent diseases that afflict humanity, with a view of eventually learning the conditions which exist during periods of time particularly noticeable either for the prevalence or absence of each of the important diseases."[144] So wrote Dr. Baker in the *First Annual Report* giving a summary of

[137] *Ibid.*, XI, xxxvi.
[138] *Ibid.*, XIII, xxxvii.
[139] *Ibid.*, X, xxxi; *ibid.*, p. 515.
[140] *Ibid.*, p. xiv; *ibid.*, XIII, xiii.
[141] *Ibid.*, XII, xii; *ibid.*, XI, xii.
[142] *Ibid.*, XII, xii; *ibid.*, XI, xi.
[143] *Ibid.*, XIII, 150.
[144] *Ibid.*, IV, 143.

communicable diseases in Michigan. These statistics for the year ending Dec. 31, 1875, were based on the replies received in answer to Circular No. 11 from twenty-nine correspondents living in twenty-six different localities of the state. None were received from the upper peninsula. Thereafter these reports were to be found regularly in the annual reports of the Board.

A compilation of weekly reports was also made beginning with the annual reports of 1876.[145] Since this service had been in operation for but a single month, the first report consisted of but three brief tables.[146] Thereafter it constituted a very extensive part of each annual report.

Immigrant Inspection

As early as 1868, it was pointed out by Dr. J. H. Jerome, President of the State Medical Society, that "the imperfect quarantine regulations at New York was the principal source of smallpox, as well as various types of fevers being brought into the State."[147] This forecast was later to assume great importance as the number of immigrants increased in the movement westward.

In 1881, it was estimated that about 100,000 immigrants entered the United States annually through Port Huron.[148] At the time, it was second only to New York City as a port of entry for immigrants reaching the United States.[149] Detroit was also in on the great line of travel from East to West.[150] In this procession of immigrants were found large numbers of people who brought with them smallpox, occasionally cholera, and many other diseases equally as undesirable. In consequence of this condition, it was deemed advisable by health officials of the midwest, because of repeated outbreaks of these diseases in Michigan and in neighboring states, to call the attention of the National Board of Health to the dangers of the situation.

An initial conference of health officers and other sanitarians was held at Chicago in June, 1881, to consider the problem. A large epidemic in the northwest, and also in the immediate environs of Chicago, gave the situation an alarming appearance. Those in attendance at this meeting came to the conclusion that sanitary inspection of immigrants was an immediate necessity, and that because of the fact that the problem was

[145] *Ibid.*, V, lxii.
[146] *Ibid.*, VII, xlix.
[147] *Trans.* M. S. M. S., I (1867 and 1868), 38.
[148] *An. Rep.* S. B. H., X, 436.
[149] *Ibid.*, XIII, 198.
[150] *Loc. cit.*

interstate in character, the National Board of Health was the proper body to take charge of the work.[151]

Soon after the meeting in Chicago, the Michigan State Board of Health passed a series of resolutions requesting the National Board of Health to establish a system of immigrant-inspection in Michigan.[152] In addition, a committee consisting of Drs. Lyster, Avery and Baker were appointed to plan a suitable system for the inspection of immigrants in transit. The attention of the governor was also called to the fact that there were no available funds in the state to pay for and administer an inspection service.[153] As the result of representations made by the State Board of Health in cooperation with those of neighboring states and municipalities to the National Board of Health, a conference was called in Port Huron on May 18, 1882.[154]

At this meeting the subject of inland immigrant-inspection, and inspection at ports of entry other than those on the Atlantic coast, was considered. Resolutions were adopted which aimed at the control of smallpox and other diseases likely to be transmitted by immigrants. At the urgent request of the Michigan State Board of Health to begin the inspection at once, Dr. Stephen Smith of the National Board of Health took immediate steps to organize a force of inspectors necessary to carry on the work.[155] It was decided that stations be established at Port Huron and Detroit, these to be under the supervision of the secretary of the State Board of Health. As finally adopted, the plan called for an inspection at the port of entrance for signs of contagious disease. Those immigrants found to be insufficiently vaccinated were to be re-vaccinated. Those refusing vaccination were to be denied passes.[156]

Immigrant-inspection in Michigan had its beginning on June 1, 1882.[157] From then on until September 30, 1882, 17,909 immigrants were inspected at Port Huron and 22,901 at Detroit. To assist in carrying on this work, the State Board of Health asked the cooperation of the Dominion of Canada because of the transportation problems involved.[158] Despite the fact that the service soon proved itself to be of great value, it was destined to be short-lived. By reason of curtailment of funds allotted the National Board of Health by Congress, the service at Detroit had to be discontinued on Dec. 15, 1882. That at Port Huron was continued until May 31, 1883.[159]

[151] *Ibid.*, XI, 40.
[152] *Ibid.*, X, 436.
[153] *Ibid.*, X, xxxii.
[154] *Ibid.*, p. 436.
[155] *Ibid.*, XI, 40; *ibid.*, X, 436.
[156] *Ibid.*, p. 437.
[157] *Ibid.*, X, 436; *ibid.*, XI, 31.
[158] *Ibid.*, X, xxxiv.
[159] *Ibid.*, XI, 35; *ibid.*, X, xxxvi; *Trans.* M. S. M. S., XVI (1886), 299.

In September, 1883, Congress made an appropriation of $100,000 to be expended at the president's discretion for the prevention of epidemics in the country. He was urged by various legislators to place this fund at the disposal of the National Board of Health, but instead, he authorized the Marine Hospital Service to take charge of the work.[160] With this change in sponsorship, the work previously begun at Port Huron and Detroit was later to be resumed. From the very beginning of the immigrant inspection service, the financing caused considerable uncertainty regarding its continuance. Some legislators favored a tax on immigrants for this purpose, but the Supreme Court ruled that it was unconstitutional for a state to impose a tax on immigrants.[161] Others pointed out that it was unfair to ask the cities of Port Huron and Detroit to bear the expense, since the service benefitted the entire north-west.

From a perusal of source materials, it is evident that the delay caused by these differences of opinion was to impede the re-establishment of the service for a considerable period of time.[162] The State Board of Health had to wage a long struggle before the Federal Government finally consented to resume the service.

On Oct. 10, 1882, the Board learned for the first time from the National Board of Health, that the service was to be discontinued.[163] On receipt of this letter, members of the Board directed Dr. Baker to present arguments and facts to the National Board of Health showing the necessity for the continuance of the service. A letter was prepared by Dr. Baker and sent the following day.[164] Dr. Baker's second step was to prepare a memorial to Michigan members of Congress, petitioning for a continuance of the service. This was approved and sent on Jan. 31, 1883.[165] A similar memorial to Congress on July 12, 1882, had failed to accomplish its purpose.[166] To further matters at Washington, Dr. Baker and other representatives of state and municipal boards of health met with representatives of the National Board of Health at Washington on Dec. 13, 1882, setting forth the necessity for a continuance of the service.[167] As a result of this meeting, a resolution was prepared and taken before both branches of Congress by Michigan solons in January, 1883. Senator Conger and Representative Rich of Michigan introduced a bill to provide for immigrant inspection service under the auspices of the National Board of Health. Both measures failed however.[168]

[160] *An. Rep.* S. B. H., XI, 32.
[161] *Ibid.*, p. 35.
[162] *Ibid.*, p. 33.
[163] *Ibid.*, X, xxxvi; *ibid.*, XI, xxix.
[164] *Ibid.*, p. xxix; *ibid.*, p. 32.
[165] *Ibid.*, p. 34.
[166] *Ibid.*, p. xxxviii.
[167] *Ibid.*, p. 33.
[168] *Ibid.*, p. xxxi.

The State Board of Health finally made a direct appeal to the President of the United States, Chester A. Arthur, in their fight to secure protection for the people of Michigan and neighboring states. The following letter was sent to the President on April 19, 1883:

> Michigan State Board of Health.
> Office of the Secretary, Lansing,
> Michigan; April 19, 1883.
>
> To His Excellency, Chester A. Arthur, President of the United States,
> Washington, D. C.:
>
> Sir: The Michigan State Board of Health respectfully represents and memorializes your Excellency as follows:
>
> Whereas, The National Board of Health is the only national authority which has by its public-health work, and especially by its system of immigrant-inspection, gained the confidence of the sanitarians and public-health officials of the State, therefore,—
>
> The Michigan State Board of Health earnestly prays your Excellency to place the contigent appropriation of $100,000, or so much thereof as may be needed, in the hands of the National Board of Health, to continue the immigrant-inspection, and to add such an inspection of inter-state travel as will tend to prevent the contagium of small-pox, now present at New Orleans, Nashville, and Saint Louis, from being carried northward, and the disease from thus becoming generally epidemic in this and other northern States, which many Southern people visit at this time of the year.
>
> Very respectfully yours,
>
> Henry B. Baker, M. D.
> Secretary.[169]

As the sources perused indicate, this effort was likewise doomed to failure.[170]

In 1885, an outbreak of smallpox in Montreal, Canada, occasioned great alarm in Michigan, Montreal being on the direct line of travel to Michigan and other states nearby.[171] As rumors spread of the outbreak of the disease, the State Board of Health became very active, sending circulars widespread over the state urging the people to be vaccinated, and at the same time urging upon the Federal Government once more the necessity for the establishment of a permanent system of immigration inspection.[172]

[169] *Ibid.*, p. xxxvii.
[170] *Ibid.*, p. 35.
[171] *Ibid.*, p. xxxv.
[172] *Ibid.*, XII, xxxix; *ibid.*, XIV, xxxiii.

At the suggestion of Dr. O. W. Wight, Health Officer of Detroit, the health officers of the counties in the lumbering districts were asked by the State Board of Health to urge the owners of the lumbering camps to have their men vaccinated.[173] This was occasioned by the fact that large numbers of French-Canadians from Canada went directly to the woods for employment.[174] From letters later received by Dr. Baker, it was revealed that hundreds of people were vaccinated as the result of these efforts by the Board.[175] It was reported that one propagator of bovine vaccine virus sent nearly 17,000 "points" into Michigan in six months of 1883.[176] Hundreds of pamphlets on the "Restriction and Prevention of Smallpox" were distributed to the lumbermen of the state.[177]

In the summer of 1885, conditions at Montreal became so critical that the State Board of Health, the governor of the state and the Health Officer of Detroit appealed to the President of the United States to aid in establishing an inspection service until the state was able to assume the work.[178] Efforts meanwhile had been made in the state legislature in view of the acuteness of the situation, it being learned that several thousand cases of smallpox existed in Montreal. Acting on the recommendation of the retiring Governor, Hon. Josiah W. Begole, the Hon. P. P. Shorts introduced a bill into the legislature making an appropriation available to be used by the State Board of Health, whenever the governor deemed it necessary for the purposes of maintaining an inspection of travelers to prevent the introduction of smallpox, cholera and other diseases.[179] This bill was finally passed in July, 1885, becoming Act No. 230, Laws of 1885.[180] For some reason which the accounts fail to reveal, it was not ordered to take effect until September 18, 1885.[181]

Meanwhile the situation in Canada had become still more alarming. The National Board of Health, however, in answer to the aforementioned appeals by the State Board of Health, the governor, and the Health Officer of Detroit, established an immigrant-inspection service on August 25th at both Port Huron and Detroit. It was agreed that the Marine Hospital Service would maintain train-inspection until the law, placing the contingent state appropriation of $10,000 at the disposal of the gov-

[173] *Ibid.*, XIII, 215; *ibid.*, XIV, xxxiii.
[174] *Ibid.*, XIII, 198.
[175] *Ibid.*, XIII, 217.
[176] *Loc. cit.*
[177] *Ibid.*, p. 272.
[178] *Trans.* M. S. M. S., VI (1875), 299; *An. Rep.* S. B. H., XIII, 199; *ibid.*, p. 200.
[179] *Ibid.*, XIII, 197.
[180] *Ibid.*, p. xxxviii.
[181] *Ibid.*, p. 197; *ibid.*, p. 206; *Trans.* M. S. M. S., XVI (1886), 299.

ernor on Sept. 18, 1885, took effect.[182] On this latter date the State Board of Health took charge of the service, maintaining it until the governor ordered its suspension on October 21st,[183] following which the Marine Hospital Service[184] again resumed the work, continuing it until Dec. 21, 1885, when it was discontinued altogether.

Vaccination Against Smallpox

From a review of early accounts of Michigan's history, it is learned that the practice of vaccination was quite common around them during the middle of the nineteenth century. An announcement appearing in the September, 1855, number of the *Peninsular Journal of Medicine* informed its readers that:

> We are frequently inquired of for reliable Vaccine Virus, and would inform our readers that we are assured that it can be obtained at all time of E. L. O'Hara, Druggist, Chicago, by sending $1 by letter. All such orders will be promptly responded to by return mail.[185]

In 1868, Dr. Henry F. Lyster declared before the State Medical Society meeting at Detroit that, "use of vaccination is as general and universal as the alphabet."[186] Later in this same paper he took occasion, however, to point out that the children in Detroit were being neglected.

Following the establishment of the State Board of Health, many inquiries were received asking where reliable vaccine virus could be obtained. As a rule, so the accounts would indicate, these people were directed to Dr. George E. Ranney of Lansing, who for many years supplied the physicians of the state with vaccine which he obtained from Dr. E. L. Griffin of Fond du Lac, Wisconsin.[187] This fact was made known to physicians of the state in a circular the Board issued shortly after a law was passed (Act No. 146, Laws of 1879) directing health officers of the state to offer vaccination free to the people.[188] The Board at one of its regular meetings in 1877 drew up a resolution thanking Dr. Ranney for his trouble in securing and making accessible to physicians

[182] *Ibid.*, p. 300; *An. Rep.* S. B. H., XIII, 201; smallpox spread from Montreal to nine states in the United States, but not a single outbreak occurred in Michigan (*ibid.*, XIII, 210).
[183] *Trans.* M. S. M. S., XVI (1886), 300; *An. Rep.* S. B. H., XIII, 213; *ibid.*, p. xxxiv.
[184] *An. Rep.* S. B. H., XIII, 213.
[185] *Pen. J. Med.*, III (1855), 142.
[186] *Trans.* M. S. M. S., I (1867 and 1868), 81.
[187] MacClure, *op. cit.*, p. 36.
[188] *An. Rep.* S. B. H., V, xxxv.

of the state his "reliable non-humanized cowpox virus." In addition, the resolution asked him to act as a permanent agency for the distribution of Dr. Griffin's virus.[189] In 1877, a Detroit physician, Dr. W. H. Rouse, made the suggestion in a communication to the State Board of Health that it cooperate with the State Agricultural College in the propagation of bovine virus for the use of physicians in the state. The Board's Committee on Epidemic Diseases, Dr. Arthur Hazlewood, recommended that, "inasmuch as E. L. Griffin, M. D., of Fond du Lac, Wisconsin, makes a specialty of supplying reliable bovine virus, at a moderate cost, and has appointed Geo. E. Ranney, M. D., of Lansing his agent for this State, therefore all inquiries to the Secretary of the State Board of Health for reliable bovine virus may, with propriety, be referred to either of the above named gentlemen."[190] At the State Medical Society meeting that same year, Dr. William Brodie of Detroit offered a resolution requesting the state to furnish the medical profession with free vaccine virus. Apparently there was much opposition to this idea, for it is recorded that the resolution lost by a very large majority.[191] From a circular of inquiry sent out in 1883 by the State Board of Health, it was learned that most of the vaccine used in the state was secured from H. Bosworth and Sons, Milwaukee, Wisconsin; the Watertown farm, Wisconsin; the New England Vaccine Co.; from a firm in Buffalo, New York; from C. H. Leonard, Detroit; and from Dr. E. L. Griffin of Chicago, Illinois.[192]

In 1879, pursuant to activities of members of the State Board of Health,[193] Act No. 146 was passed, which authorized the local board of health of each city, village and township in the state to offer free vaccination to every child not previously vaccinated, and to all other persons who had not been vaccinated within the preceding five years.[194] This law, however, was antedated in its effect by a resolution issued in document form by the State Board of Health in 1877 to all local boards of health,

[189] *Ibid.*, V, lxiii; in a letter addressed to the editor of the *Detroit Review of Medicine and Pharmacy* for August, 1872, Dr. Andrew Jno. B. Jenner of Detroit said, "apart from the fact that I am a lineal descendant of the great Dr. Jenner, the discoverer, being myself a physician, I am intensely interested in, and a close observer of all that relates to vaccination as a preventive of smallpox . . . I go still further, and am convinced, in my own mind that virus, from whatever source obtained, which, by inoculation, will produce true vaccinia will forever protect a person from true variola" (*Det. Rev. Med. and Pharm.*, VII (1872), 422).

[190] *An. Rep.* S. B. H., V, lviii.

[191] *Trans.* M. S. M. S., VII (1877), 12.

[192] *An. Rep.* S. B. H., XI, 10.

[193] *Ibid.*, VI, lvi; *ibid.*, IX, 74.

[194] *Ibid.*, XI, 69.

requesting their health officers to offer vaccination free to everyone in accordance with Section 1736, Compiled Laws of 1871 (see Appendix).[195]

In 1876, at the regular meeting of the Board, Dr. Arthur Hazlewood read a paper at the request of the Board on "Vaccination." It was later published in the annual report for that year.[196] It is of interest to note that this was the first paper ever to be published by the State Board of Health on the subject of vaccination against smallpox.[197]

Production of Bovine Vaccine Virus

In a leaflet describing the prevention of smallpox by vaccination, sent out by the State Board of Health to the health officers of the state in 1877, Dr. Geo. E. Ranney was designated as the official distributor of bovine vaccine virus for the state.[198] Later on, as has already been pointed out, others in the state and elsewhere made it a business of supplying physicians and health officials of the state with this biological.[199]

In 1882, Dr. Foster Pratt, Health Officer of Kalamazoo, advocated the following plan for enabling the State Board of Health to produce and supply physicians of the state with bovine virus for the prevention of smallpox in the state:

1. The erection by law, of a Vaccine Virus Fund of say $2,500 more or less, as may be thought best.
2. The propagation of virus, constantly, in a few animals—say four or five every month—the number of animals to be increased as necessity may require.
3. The animals to be raised or purchased by the best official of the farm, the best judge of the value and condition of the animal and the best to handle and care for them while under operation; but all purchases to be ordered by the State Board of Health, or some one designated by it and responsible to it.
4. The duty of selecting or providing virus, for this work, to be devolved solely, on some competent member of the Board, and the duty of deciding whether the virus from any and all animals shall or shall not be preserved for use to be devolved also on the same officer.
5. The rules relative to "Points," and how they are to be made, and charged, and preserved, and distributed, and sold, to be made by the State Board of Health.
6. All expenses for the purchase of animals, needed for this purpose, to be drawn

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[195] *Ibid.*, V, xxxv; *ibid.*, VII, 179.

[196] *Ibid.*, IV, xxvi.

[197] MacClure, *op. cit.*, I, 36.

[198] *An. Rep.* S. B. H., V, xxxv; *ibid.*, IX, 174; according to a document issued by the Board in 1888 "Prevention and Restriction of Smallpox," Dr. Henry A. Martin of Roxbury Station, Boston, Massachusetts claimed to be the first propagator of bovine vaccine virus in the United States (date not stated) (*ibid.*, XVI, 205).

[199] *Ibid.*, XI, 10.

from the fund before alluded to, and the proceeds of the sale of all animals so bought and used, after they shall have become salable or fit to sell, shall be paid into the treasury and credited to the same fund; all this also under such safeguards and regulations as the Legislature and the State Board of Health may deem best or necessary.

7. The virus to be put up in packages bearing the State Seal and the date of its production to be sold at such price as will defray expenses for service, points, packages, etc., so that the "fund," when once established, need be neither much increased or decreased.[200]

Speaking on the same problem, Dr. O. W. Wight, Health Officer of Detroit, asserted, "It is not enough to enact a mandatory law. The state in requiring the vaccination of the whole people within its jurisdiction, is bound to do this work, gratuitously, safely and well . . . the state of Michigan, in connection with the University, or Agricultural College and under the direction of its Board of Health, should maintain a vaccine farm for the production of bovine virus of the best possible quality, in sufficient quantity for the use of the whole commonwealth." [201]

Isolation and Quarantine

The control of communicable diseases by isolation and quarantine was carried out with great difficulty in the period following the establishment of state and local boards of health in Michigan. In 1887, Dr. David Inglis of Detroit wrote, "I speak from personal knowledge when I say that so far as Detroit is concerned the isolation of smallpox patients has been hitherto a mere farce. We placarded the house to warn passers-by, which was well, but the inmates who were unaffected had free course. They went out to the nearest supply store, they rode in the street cars, many of them went to their usual avocation carrying the germs with them." [202] In response to a circular of inquiry on the subject in 1882, Dr. Judson Bradley wrote Dr. Baker as follows, "Isolation seems to prevent spread of scarlet fever and diphtheria, if it can be done faithfully and honestly; but there seems to be the trouble. People will not do it. It is more important to have a "wake" than to prevent the spread of disease." [203] Another physician, Dr. J. M. Swift of Northville, replying to this same circular, demanded that "a law be carried into execution with heavy

[200] *Ibid.*, X, 37.
[201] *Ibid.*, p. 31.
[202] *Trans.* M. S. M. S., VII (1877), 64.
[203] *An. Rep.* S. B. H., XI, 18.

penalty for leaving infected localities until a permit from competent authority is granted." [204]

In 1882, the Hon. LeRoy Parker prepared such a bill, making it a penal offense to communicate disease. This was reported at a meeting of the State Board of Health and later before a committee of the legislature. There it failed to receive ample support.[205]

The practice of putting placards on the homes of people affected with contagious diseases was instituted in Detroit in 1882 shortly after the Board of Health for that city was established.[206]

[204] *Ibid.*, XI, 18.
[205] *Ibid.*, p. xxx.
[206] *Mich. Med. News*, V (1882), 292.

THE WAR YEARS OF ALBERT JAMES MYER, M. D.: ARMY SIGNAL SERVICE, 1861-1863

FRANK G. HALSTEAD

In 1854, Dr. Albert J. Myer, an up-state New York physician, joined the Army Medical Department. He had taken his M. D. three years before at the Buffalo Medical College and his A. B. at Geneva College in 1847.[1] His primary education was had in the Buffalo Public Schools. He had been born in Newburg, and was twenty-seven the year he passed his qualifying medical examination for the Army.[2]

There is very little data on Dr. Myer's youth. From sources to be cited, it is learned that he was of Scotch parentage; that his mother (and presumably his father too) died when he was still a boy. His upbringing was entrusted to a maiden aunt in the western portion of New York State. There is pretty general agreement that young Myer worked his way through Geneva College by becoming an apprentice Morse operator in a commercial telegraph office,[3] that he possessed an enquiring and curious turn of mind, and that his medical thesis for graduation, "A Sign Language for Deaf Mutes," was the Shadow of things to come.

It is unfortunate that Dr. Myer had no Boswell, and that information of his early life is so meager and hard come-by.[4] In particular, one wonders why the young doctor chose as a career the Medical Department

[1] Buffalo Medical College became the University of Buffalo in 1886; Geneva College had been Geneva Academy prior to 1822; Geneva Free College from 1825-1860, and Hobart College from 1860 to date.

[2] According to Dr. Edgar Erskine Hume, Brigadier-General, U. S. Medical Corps, Myer was born in 1828, which would make him a year younger. (See "The Foundation of American Meteorology by the United States Army Medical Department," in *Signal Corps Bulletin*, No. 109 [July-December, 1940], p. 65. Dr. Hume repeats this date under the photograph of Dr. Myer which accompanies the article. Other sources indicate 1827.

[3] Probably an office of the American Telegraph Company, which served that section. In those days, it was not uncommon to find mere boys serving as full-time operators. They were quicker to learn and had the same knack for telegraphy as young radio amateurs have for wireless today.

[4] The work of J. Willard Brown, *The Signal Corps, U. S. A.* . . . (Boston: U. S. Veterans' Signal Corps Association, 1896), for all its omissions remains a primary source of information about Albert J. Myer. This history was to have been composed by Dr. Myer himself, for he advised Lieutenant Brown that he was engaged upon it when the latter brought up the subject in 1878. Probably he really intended to compile such a history, but he died in 1880 without its having appeared.

of the Army, although there is nothing at all unusual in his making such a decision. The officers of the Medical Department were all originally civilian physicians; each man had made, at one time or another, the same choice that Dr. Myer made in 1854; and there was nothing strange in this. We are quite justified in assuming that Dr. Myer, finding himself qualified, desired to become an officer and engage in the practice of military medicine. Lieutenant Brown bears this out:

> Notwithstanding his [Myer's] marked bias for artistic and scientific pursuits, he early manifested a predilection for a military life. In his personal bearing he was every inch a soldier, tall, erect, alert, having that air of command in every look and every movement which presupposes perfect obedience. Although a strict disciplinarian he was just and impartial. He was quick to discover and reward, as far as he had the power, honest merit and honest endeavor.[5]

The description is apt. Dr. Myer was very "G. I."; he was at times a martinet.

Assistant Surgeon Myer spent the following six years on posts so far removed as Bedloe Island, N. Y., and Fort Duncan, Texas. Most of his time was, however, spent in the desolate Indian Territories of the New Mexican Department. Here, he had opportunity by day to study the signal-smokes raised on distant horizons; by night, the torches of far-off Comanche signallers transmitting their crude intelligence from village to village.

In the spring of 1858, Assistant Surgeon Myer went East in line of duty to demonstrate at Ft. Hamilton, N. Y., and Old Point Comfort in Virginia, his system of flag and torch signals for military signalling. The following year, a $2,000 appropriation for experimentation was authorized by the Congress, and an office with grade of major for an Army Signal Officer was created. Only on June 20, 1860, however, was Major Myer appointed to the grade. He had served for six years without having had so much as a brevet-promotion. Now, at one fell swoop, he was to ascend from the bottom to a field-grade; such an opportunity seldom presented itself to humble Assistant Surgeons.[6]

[5] *Op. cit.*, 20. Many young men with no serious idea of practicing medicine, used to enroll in medical colleges for the broader outlook. Perhaps Dr. Myer was of this number. If he had intended to make a career of military medicine, he would probably have donned the uniform as soon as his degree was conferred.

[6] In the present A. U. S., an officer is eligible for a promotion every six months, and it is not uncommon for Company officers to receive such promotions with regularity. In the old days, things were different . . . witness a ruling of the Judge Advocate General: "*Held* that is a peculiarity in the *status* of assistant surgeons and lieutenants of engineers

The signal-system was tested by the Signal Officer and a sixteen-man detail. Two lieutenants rounded out the party, which was attached to the command of Lieutenant Colonel E. R. S. Canby, who was campaigning against the Navajos. It rested with Colonel Canby to say whether the signal-sytem was worth adapting for military use.

In all essential points, his judgments were favorable to Myer's invention. Nevertheless, he refused to recommend that all officers be systematically instructed in signalling; and he also refused to recommend that a military telegraph system should be established and operated by the contemplated Signal Service.[7] Major Myer had his first tantrum in the face of Canby's reiterated refusals; he threatened to resign. Nothing came of it.

Although Major Myer found it impossible to procure for the Corps a military telegraph establishment, he did obtain sufficient equipment to enable him to maintain some sort of electric communication between his troop-units, and to furnish, at the request of Department Commanders, such telegraphic communication as he sometimes had available. At the outset, this was not a great deal, of course. Although such high-ranking officers as McClellan and Butler considered a simple field-telegraph something to be desired, his early requisitions for telegraph trains were validated with reluctance. Their efficient operation was impaired, also, by the Major's unfortunate weakness for expensive gadgets like the Beardslee Key.[8]

and ordnance that promotion to a higher grade results by operation of law from mere duration of service and independently of any action by the appointing power." (*A Digest of the Opinions of the Judge Advocates General of the Army [1862-1912]* (Washington: Gov't Pr. Off., 1912), p. 805.)

[7] In a letter dated April 19, 1861, from Ft. Garland, N. M., to Myer in Santa Fé. His judgment has in each instance been upheld. Although Myer's Signalling was later to be taught at the General Staff School at Leavenworth, no especial instruction of all officer-personnel in Signals was attempted. The telegraph was rightly held to be a signal-specialty for which the Army Service could not possibly prepare itself under current conditions and with so small an appropriation. Later, with the advent of real warfare, and with less squabbling in the Congress about Army expenses, a telegraph-operation-and-control service was needed so swiftly that there was nothing for it but to institute a separate organization of professional operators and linemen. Of which considerably more will be heard later.

[8] This was the brain-storm of G. W. Beardslee, another New Yorker; effectively, it is neither an invention nor a Key. It is just another variation of the old Wheatstone A. B. C. induction-telegraph, consisting of a fair-sized chest surmounted by an alphabetical dial with a needle, or pointer, pivoted in the center. Magnetic coils and simple magnets are mechanically activated by the movement of the needle by its operator, and the magnetic fields set up by the alternate juxtapositions and withdrawals of these magnets,

With the passing of legislation for the permanent organization of the Corps in March of 1863, however, Congress loosened the purse-strings; by June, five trains were serving the Army of the Potomac; six, the Department of Tennessee. Six other military departments and the U. S. M. A. at West Point divided the remaining nineteen trains between them. In theory, the Signal Service electric telegraph was not a competitor to the newly-organized Military Telegraph Corps,[9] but its adjunct. In actual practice the two agencies were continually in one another's path. However, we anticipate.

Major Myer held his office for over a year when the First Battle of Manassas jolted the North into realizing that the Rebels could fight and that the Union was in for a long, hard war.

At that time, Major Myer was on duty at old Fort Monroe and he had but a handful of signal-men there or anywhere else. He had come East again under Orders to report to General Winfield Scott in New York City[10] on June 1, 1861. He proceeded to Washington and

charge the wire with self-generated current. At the receiving office, the needle duplicates the motions.

Since the voltaic batteries of the 1860's were fearfully cumbersome, the Beardslee "Key" had possibilities over a circuit of not more than twenty miles at most. But they were delicate, required precision adjustments frequently, and were slower than the standard hand-keys. Furthermore, they were subject to mysterious "failures" at critical moments, they had a decided tendency to skip letters or transmit letters other than those indicated, and many operators considered five miles the maximum distance over which even ragged communication was possible. The indicator-dials theoretically did away with the sounders of the Morse keys; though later Beardslee models had them for experimental purposes. Professional telegraphers looked upon this battery-less wonder with the jaundiced eye of suspicion; the telegraph-brotherhood had long since decided that the early recording mechanisms, the dials, and induction-sets in general were impractical. Such indeed proved to be true in the Beardslee's adaptation for military service. The case for and against the Beardslee Key is reviewed in considerable detail by William R. Plum's *The Military Telegraph during the Civil War* (Chicago: Jansen, McClurg & Co., 1882), II, Ch. 6.

[9] To all intents and purposes, the Government took over the commercial circuits back in 1861; although the legislation authorizing this action was not enacted until January 31, 1862. And the Telegraph Corps was established on very unsound footing in consequence.

[10] After General Scott's humiliating defeat on the last Whig Ticket in Pierce's Democratic landslide in 1852, the aged hero of 1812 had the whim of removing with Army HQ from the Capitol to New York, where he remained until December 1860.

Not having seen a transcript of Major Myer's Orders, which he probably received sometime in May, I assume that the Adjutant at his New Mexico station had general instruction to send him East when a certain stage had been reached in the signal experiments, or possibly even on a certain date. Had these instructions been of any long standing, the removal of HQ back to Washington would not then have been effected, and the Authority in the western department, not being gifted with clairvoyance, directed

signed in at the Adjutant General's office on the 3rd. On the 10th, he was en route to Fort Monroe in Hampton Roadstead with instructions to set up a Signal School at that Post. Major Myer had desired to take Lt. Samuel T. Cushing, detached from service with the 2d U. S. Infantry, as his assistant; Lt. Cushing had been with him in New Mexico and was a good signal officer. Since his request for Cushing to accompany him had been refused, however, it was necessary for Major Myer to start more or less at scratch, at Monroe, with the signal detachment given him for training by Major General Ben Butler, U. S. Vols.[11] The Instruction commenced almost at once with a real tactical exercise—the direction of the firing of the batteries at Fort Wool, out in the Roads, upon the Confederate works on Sewell's Point. This was accomplished by wig-wag from a signal tug lying to due east of Newport News, beyond the range of light ordnance in the city.[12]

General McDowell had already moved his Grand Army of 30,000 men into enemy territory when Orders from the War Department were on their way to Major Myer instructing him to report to McDowell. It was July 17. The Army of the Potomac was preparing to occupy Centreville the following day. If Major Myer ever saw those Orders at all he saw them in the Adjutant General's office in Washington. For he was en route to the Capitol on business for General Butler[13] when they passed him going in the opposite direction. Only when Major Myer called at the office of the Adjutant General to sign the inevitable register,

Major Myer to proceed to the HQ occupied for the past eight years. Not a very grave error, to be sure. It had happened before—and it has, I fear, happened again.

[11] The "Beast of New Orleans" has been roughly handled by most publicists and historians. Yet his greatest fault was over-zealousness on behalf of his country. Butler's disposition on the Mumford case was pretty brutal; the New Orleans Proclamation, to his own surprise, made him almost as many enemies in the North as in the Confederacy. Nevertheless, his high-handed tyranny over Baltimore saved Maryland for the Union. And he was the first commander to work with the Signal Service in real tactical operations in the Civil War.

[12] An auspicious beginning. Throughout the war one of the most valuable contributions of the Signal Corps to our offensive and defensive operations, was the ship-to-shore signal system employed in joint army and navy operations. These signals were called The General Service Code and found extensive use in operations in inland waters.

[13] While I know no evidence for this, I suspect that Butler and Myer disliked by so many government officials and so many of their own colleagues, may have hit it off together. Butler even put the U. S. M. T. C. people who worked the telegraph from Monroe to Hampton, under Major Myer. Of course, General Butler had no authority whatsoever to take such a step and the War Department put a stop to the experiment soon enough. But "Old Spooney" played ball with the C. S. O. from the very beginning and not impossibly liked Major Myer and was reciprocated.

was he to learn from Colonel Townsend, no doubt surprised to see him so quickly, that he and his Orders had passed in the night. (But see Appendix *infra.*)

Myer was in a quandary. It was now obvious that the first major engagement in the War of the Rebellion was about to be fought. His signal-detachments were all back in Fort Monroe. He thought of 1st Lieutenant Evan Thomas, whom Butler had given him from the 4th U. S. Artillery. But it was now July 20th; time was wasting. Major Myer set out on the trail of General McDowell at 2:30 A. M. with neither flags nor flagmen. To have done any good, he realized he would have to have at least the equivalent of an Army Corps Signal Detachment and preferably two or three.[14] Anyhow, for the first action the Army of the Potomac was set up in Divisions and not by Army Corps; four of them were organized by brigades, from two to five per Division. The Fourth Division was not brigaded at all but made up of nine separate regiments.[15]

Major Myer found himself literally helpless to do anything. He could not even locate the Commanding General and never found him at all until the withdrawal into Centreville. He did come upon Brigadier-General Tyler, commanding the First Division, and served on his staff as Aide. Major Myer must have been considerably galled when he saw the distant flashing of flags manipulated by Confederate Signalmen. Lieutenant E. P. Alexander, an early disciple of Myer, who had a peculiar talent for signal-work, had first mastered the new signal system and then delivered it to the enemy when he accepted an appointment in grade of Captain in the Confederate States Army. Later it transpired that Captain Alexander himself trained the signal-men at Bull Run I and actually oversaw the signal work of the several Confederate stations.[16] But in

[14] A Corps Signal unit was generally composed of a captain, three first lieutenants, seven noncoms twenty PFC's, and thirty-four Basics. For a field army, two-Corps type, Army HQ had in additon to Corps Signal Troops a Headquarters Signal Detachment. The T/O called for a Captain, two lieutenants, three noncoms, ten PFC's, and three Basics; the number of the latter being determined by the number of Corps composing the Army, each Corps furnishing three Basics of its signal troop. (Brown, *op. cit.*, 130.)

[15] A poor tactical arrangement throughout. The other major battles of the Army of the Potomac were fought by Corps and Divisions within the Corps.

[16] Captain Alexander was in charge of the station near Henry House. Here originated the fateful signals apprising General Evans that his Left was giving way north of Sudley Springs. Relayed from station to station, the disturbing news brought Hampton, Bee, and Jackson in support of the flank. At any rate, so claims Captain . . . later Brigadier-General . . . Alexander in his *Military Memoirs of a Confederate.* Text-book histories usually state that reenforcements were sent when the sound of increased artillery fire

the Union Army, except for the traditional cannon announcing that the enemy was engaged, no signals were used at all. All communication was furnished by mounted and dismounted messengers.

And while these gallant couriers were cut off by disorderly mobs of militia charging—or retreating—and lost their paths, while they fell in the sights of enemy sharpshooters, the Left Flank knew not what the Right was doing nor did the Center know of either side. And in the interim, what were Myer's little handful of trained signal-men doing? They were idling in Barracks down at Monroe; they were fighting as Infantry in their old outfits; they were playing pinochle in the Orderly Room at Fort Garland, N. M., or hunting Gila monsters back of the parade-ground. It was Sunday; they were on their own time. It was not their fault that the Signal Service had not been organized to serve at Bull Run and that their flags lay unused in supply rooms.

Back at McDowell's temporary command post at Arlington Heights, Major Myer made certain recommendations for organizing a signal service in the now-defeated Army of the Potomac. This time more attention was given him. From the War Department came instructions to establish signal communication between Generals Banks, Stone, and McCall in near-by Maryland. On August 14, officers and enlisted men were detached from their units to attend signal-instruction camps in the Old Line which were shortly removed to Georgetown and consolidated.[17] The usual training-period was thirty days and it included the Electric Telegraph. Major Myer's confidence in the Beardslee Key was such that he devoted practically no time to telegraph but laid his trust in the

to the left suggested an unexpected attack there. Alexander's account is substantiated by such authorities as Major Mathew F. Steele's *American Campaigns* (Washington: Byron S. Adams, 1909), I, 137; Brown accepts it as well. In point of fact, since McDowell was carrying a pretty determined attack on the left, with all the excitement and noise accompanying an assault, the attempt could not have remained a secret for long with the aerial telegraph or without it. Probably Alexander's signals started to come in coincident with the cannonading; and Steele confirms the logical assumption that mounted couriers were not long in reaching the command post of the unit HQ.

[17] The bulk of the camp personnel was regularly enlisted for signal service in the A. U. S., but in the beginning, it was necessary to detail officers and men from other arms and services. Most of them passed examinations after instruction and became regular Signal Service personnel. In addition, around 700 officers and men from line-outfits who had no official connection with the Service were sent to Georgetown Heights, trained, and returned to their regiments. For while the Army of the Potomac was rebuilding, it absorbed Major Myer's signal detachment as fast as he could send them out. Far-sighted commanders of smaller units, lacking the priority of a Corps Headquarters, say, were glad to detach a few of their own men for signal training. Brown, *op. cit.*, 55-77.

Beardslee Prospectus, which alleged that any man who could read and write could become a competent operator in a day's time.[18]

In the field, signal troops operating Beardslee equipment were beset with every difficulty born of inadequate preparation and even less adequate matériel. Though the Beardslee actually would work a circuit, there was a certain inconsistency of performance in it that proved eventually the only thing to be relied upon. One of the professional telegraphers of the Telegraph Corps waggishly suggested that a mounted messenger be sent with all the traffic as soon as the key was closed. Otherwise the messages would all be garbles at the other end.[19] A signal train in the Gulf Department, to operate an 18-mile wire, had 12 wagons, 38 mules, 52 enlisted men, and ten teamsters. Captain Bulkley, Superintendent of Telegraphs in the Gulf, claims to have worked a 510-mile line with 2 wagons and an ambulance; 52 white civilians and 13 negroes. He used only 10 mules, but had four horses. This was to be considered about the largest party and the most equipment ever alloted for such an undertaking.

If the U. S. M. T. C. was capable of effecting such worthy economies of manpower and equipment (if it was), it was because it was a trained and coordinated unit before commercial telegraph was mobilized for war. Strictly an extra-legal organization created overnight, its personnel was obtained from the offices of railroad dispatchers, from telegraph-operators brotherhoods, and from both the *American* and the *Western Union* companies. Thomas A. Scott, a Pennsylvania RR. executive, brought his own

[18] In fairness to both Major Myer and to the magneto-electric telegraph, it should be pointed out that this "no-batteries" system was employed extensively both in Great Britain and in Germany by the railway telegraph agencies, and that the induction-type lines were for some purposes more serviceable than galvanic current. Some account of the advantages and disadvantages of the induction-lines will be found in Robert Sabine's *History and Progress of the Electric Telegraph* (New York: Van Nostrand, 1869; p. 156 ff.) I regret to say, however, that the name of G. W. Beardslee is conspicuously lacking in Mr. Sabine's work, and that I have yet to discover in any treatise other than Plum (*loc. cit.*) any mention of the Beardslee Telegraph. By 1879, Myer's *Manual* (Washington: Gov't Pr. Off.) was devoting entire chapters to Morse Telegraph equipment and methods; although a short section summarizing the field telegraph of war days continues, with some inconsistency, to champion the induction-telegraph, this unnecessary inclusion was but a gesture.

[19] An expedient actually resorted to by Capt. C. H. Bulkley, U. S. M. T. C., on the Vermillionville-New-Iberia (La.) line. However, this line was 18 miles long and must have stored up too much resistance to the magnets . . . which, like batteries, gradually weaken with use. Capt. Bulkley also claims that Gen. Banks was so disgusted with the operation of a Signal Service wire only three and a half miles long that he directed the Telegraph Corps to take it over. (Plum, *op. cit.*, II, 98-99.)

operators to Washington when he was called upon to re-open for traffic the Baltimore-Washington roads sabotaged by enemy agents and sympathizers. Soon to become an Assistant Secretary of War, Mr. Scott was all-out for a civilian corps of telegraph personnel to take over all lines in the Union.[20] The President, who was strongly attracted by the novelties of recent invention, was an amateur telegraph enthusiast; and it was natural for him to call frequently in the telegraph office in the old War Department Building to hear the latest news.[21] It is no trick to realize that once established and in operation, the Telegraph Corps became automatically a *sine qua non* and indispensable in the war effort. And if the *American* and *Western Union* had someone in the Congress to keep an eye peeled for their interest, it would not be a matter for any great astonishment.[22]

The U. S. M. T. C. was concerned with permanent telegraph installations in the Union, and to a lesser extent with the construction of military lines over long distances. The Signal Service with its telegraph trains was also concerned with construction; but for short distances alone. These Service lines were to facilitate communication between the flanks of Army Corps or other units; to afford the commanding general communication with as many of his adjacent units as was possible; and, in general, to serve the commanding officer according to his wishes and the limitations of the equipment. And that was a big job for the Signal Service by itself. Pretty constant experience showed that the signal personnel on the short lines were not competently prepared to operate and service their circuits. Under the pounding and the jolting of field use, the

[20] Legislation for telegraph control was incorporated in the Act of January 31, 1862 affecting the railroads. In part, it reads: "To take possession of any or all the telegraph lines of the United States, their offices and appurtenances; to take possession of any or all the railroad lines in the United States, their rolling stock, their offices, shops, buildings and all their appendages and appurtenances. * * * To place under military control all the officers, agents, and employees belonging to the telegraph and railroad lines thus taken possession of by the President, so that they shall be considered as a post-road and a part of the military establishment of the United States, subject to all the restrictions imposed by the rules and Articles of War." (*See* General Emory Upton's *The Military Policy of the United States* (Washington: Gov't. Pr. Off., 1917 [4th Impr.], p. 430. Quoting Callan's *Military Laws of the U. S.*, Sec. 1, p. 492.)

[21] *See* David Homer Bates, "Lincoln in the Telegraph Office," (1907) *passim.*

[22] Brown (*op. cit.*, 180) quotes Major Myer as having claimed the *American* was scheming to control the Signal Service field-telegraph. This was in the fall of 1863; and by that time Major Myer was so suspicious and so truculent to the commercial companies and the U. S. M. T. C. that he was ready to accuse them singly and jointly of anything that came into his head.

Beardslees were thrown out of adjustment and to get any signal on the wire at all, it was necessary to borrow batteries and keys from the Telegraph Corps—and as often as not, of course, an Operator. When conditions were poor, ground-return imperfectly made, bad weather, dead line for no known reason, the Telegraph Corps was called in, and ended up by operating its own long-distance circuits, and operating and servicing the wires of the Signal Service too.

The Chief Signal Officer may have thought the tales that drifted back to him were mere inventions that would give a plausible pretext for the machinations of the Telegraph Corps in its greed to hog all the telegraph facilities in the Army as well as the Civilian wires. He probably did. He was a great exponent of practical demonstrations and somehow he convinced himself that if his officers were able to demonstrate to a credulous examining board the path of current-flow in the Beardslee's magnets and windings, they were able to keep the Beardslee lines in service. It never occurred to him that he might be wrong; and in his devotion to the Signal Corps, which he loved wisely but too well for his own good, he never credited the stories which wafted across the Potomac about telegraph failures, as containing even a germ of truth. Those forwarded through channels, I suppose, he dismissed as the black calumnies and lies of grasping Moguls of *American* and *Western Union*. With all that, however, Major Myer never under-estimated the influence of the M. T. C. and the peril in which the Signal Service was situate because of the field-telegraph controversy.

So, as the grapevine continued to stir with rumors of designs on the signal field-wires, Major Myer sent out a circular letter dated September 18, 1863 to the Chief Signal Officers of Departments and Army units served by the Signal Corps. The document is too long to be quoted in full; the gist of it is that a concerted front must be shown to the schemings of "interested and designing men"; he recommends to each C. S. O. that he communicate to his subordinates in the Service the peril in which the Corps stands of losing out to the U. S. M. T. C. entirely. Appeal to Congress. Muster your influence. The field-telegraph must not fall into the hands of the Telegraph Corps:

> . . . let it be understood that we claim only the portable or flying lines. We desire no permanent lines. We are not a corps of civilians. Our service is purely military, and . . . these lines should not be taken from us.[23]

[23] Brown, *op. cit.*, 143. The condescending observation on civilians is just sour grapes. The only reason Myer renounces the permanent lines is that he can't get them and he knows it.

Since Myer's circular was not designed to elicit replies from the addressees to the originator, History does not record what response may have attended the C. S. O.'s suggestions. But it is doubtful whether many Signal Officers were willing to be dragged into the affray that the Headquarters was apparently inviting. Going over the head of the War Department and addressing the Congress would sound pretty bad at an Inquiry. The Signal Officers wondered under which of the Articles of War Stanton could crucify them if something went awry.[24] The field-telegraph was no sinecure for the personnel who were charged with its correct operation; officers and men on these telegraph details cherished no sentimental recollections of youthful years in a telegraph office like the Chief Officer did, and probably looked on the whole deal as a convenient way of lightening their burden.

But the latter was duly circulated. Whether Colonel Stager, Superintendent of the whole U. S. M. T. C., was shown one, may not be to the point . . . but he probably was. Because on October 27, 1863 he took the initiative on behalf of the M. T. C. and addressed a letter to the Secretary of War in the telegraph controversy. Hitherto, it had been the Signal Service . . . not the Telegraph Corps . . . which had presented all the Memorials and recommendations and memoranda.

Col. Stager recommended that the U. S. M. T. C. take over the field-telegraph from the Signal Service. He spoke of the inconvenience both to the Telegraph Corps and the signal-men in that they found no common ground although they worked side by side. He held no brief for the Telegraph Corps; and concludes:

> I therefore, respectfully recommend that the management of all field and military electric telegraphs be confined to the organization known as the United States Military Telegraph Department, or, that that Department be abolished, and the whole business placed under the control of the Signal Corps.
>
> Very respectfully . . . etc. etc. (Plum, *op. cit.*, II, 101.)

Aside from Col. Stager's allegation that the Signal Service was passing out commissions to electricians and expected them to iron out the wrinkles in the field-telegraph, his description of the state of affairs was adequate without partisanship.[25]

[24] For once, *no* Article of War! Just Army Regulations. No Opinion between 1862 and 1912, prior to that of Feb. 17, 1909, is recorded, although the offence is common. It was "*Held* that . . . [the] action was a violation of Army Regulations and of the Executive order of July 7, 1905 . . . and that a proper notation should be entered on . . . [the officer's] efficiency record." ("Digest . . . ," p. 279.)

[25] Plum seconds the Telegraph Chief in his insistence that Myer was corralling

Two weeks later to the day, Colonel Myer called at the offices of Secretary Stanton. Whether the visit was made by request, or whether it was undertaken on Col. Myer's own initiative, has for long been a dark mystery, and so has the nature of the conversation that took place. There were no witnesses and the principals do not appear to have confided in their intimates the general trend of the talking. Lt. Brown merely notes that

The Chief Signal Officer was crushed, and, on returning from the War Department, was greatly agitated, and announced that he was about to be ordered from Washington, and that he hoped good care would be taken of the records.[26]

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operators and other expert telegraph personnel. I am not aware of any evidence that substantiates the charge, although there are several excellent reasons to believe that Col. Stager has been misinformed.

In the first place, the Signal Service examining authority was not set up to receive the applications of civilians; it examined enlisted personnel with respect to its qualifiations for signal work at the termination of the term of Instruction. It examined officers to determine their fitness in much the same way. It then forwarded its recommendations to a Revising or Reviewing Authority in the War Department; and the Reviewing Board seldom acted upon a list of recommendations without first drastically altering it. Myer's formal organization policy that went to Stanton on March 18, 1863 fails to mention civilian appointees under the heading "Appointments." (*See* Brown, *op. cit.*, 146-147.)

In the second place, Myer was not authorized to recommend for appointment an applicant not already in the service. In effect, the appointing of officers in the Volunteer component was a sole prerogative of the Governors of the States [*Digest* . . . p. 824. V A 5 b (2)] with one exception (*Digest* . . . p. 800, III A 4 b); all other appointments were in the Regular Army and were held permanent in absence for some specific and special limitation incorporated in the commission when first tendered. Since Col. Myer appears to have looked down his nose on civilians anyhow, it is scarcely probable that he would have indulged in the wholesale recommendation to appointment which Col. Stager infers and Plum insists upon. Since Col. Myer had all he could do to effect the transfer acceptance of Volunteer officers into the Signal Service, it seems unlikely that he could have secured any great number of regular army commissions to civilian aspirants . . . if he could have secured any at all.

In the third place, the individual Plum describes as one D. Wilmot Smith, who condescended to accept a direct commission from Myer; and the second individual described as one John Thomas, also alleged by Plum to have become an officer in the Service out of civil life . . . are not to be found in Brown's *Roster* of the signal personnel 1861-1865 (*op. cit.*, p. 715-902); nor is any officer listed who did not hold a regular army appointment prior to service in the Signal Corps, or who did not come out of a Volunteer unit holding a valid appointment from a State Executive. Messrs. Smith and Thomas may be figments of the author's imagination . . . they may be real live Signal Corps applicants who were declined appointments; but they were certainly not officers or enlisted men of the Army Signal Service from 1861-1865.

In the last analysis, commissions in the regular army component were astonishingly hard to get especially in the company grades. Stager was unable to obtain appointments for his own operators (see note *32 infra*) and Myer was far less important to Stanton than the telegraph superintendent.

[26] *Op. cit.*, 163. The final clause is even a bit pathetic. With humiliation if not disgrace staring him in the face, Col. Myer's first thought was for his work.

On that very day of November 10, 1863, Colonel Myer was formally relieved of his office and ordered "without delay" to Memphis, there to await instructions of The Adjutant General.[27] The field-telegraph matériel was turned over to Major Eckert of the M. T. C.; the Beardslee instruments were promptly retired in favor of the familiar Morse instruments and the trustworthy old voltaic cells that somehow or other got the message through, just as our modern vest-pocket power-packs get it through today.

For the remainder of 1863, military circles in the Washington department were alive with rumors that Stanton contemplated a sweeping reorganization of the Signal Corps, now headed by Lt. Col. Nicodemus, a West Point graduate. Dame Rumor's finger pointed to Major Eckert himself as the next Chief Signal Officer.

But this all blew over. There were no anti-climaxes. The counter-rumors that Colonel Myer would appeal his case to the Congress proved similarly to be without foundation. Stanton had dispatched Myer to Tennessee, and he saw to it that he was held a good distance from the capitol to prevent his raking up any trouble of this nature.[28] On July 21, 1864, Special Orders No. 244 from the War Department commenced their journey through channels, curtly advising the Colonel that he was a Colonel no longer; the Senate had failed to confirm his appointment.[29] Myer automatically reverted to his grade of Major.

The office of the Chief Signal Officer of the Army seems to have been created under an unlucky star. Col. W. J. L. Nicodemus, who was appointed C. S. O. when Col. Myer was relieved and shipped out to Ten-

[27] Special Orders 499, *Extract* 29; Amendment, *Extract* 30. A further Amendment designated Cairo, Illinois, in lieu of Memphis, as the Signal Officer's destination. Cairo was a notoriously filthy station populated mainly by thugs and ravaged by disease.

[28] McClellan was sent no farther than Trenton, N. J. A wag might suggest Col. Myer was the more redoubtable than Gen. McClellan in the same proportion as is the distance between Washington and Memphis and between Washington and Trenton, respectively!

[29] The Old Army Game. July 21, 1864 marked the adjournment of the Thirty-Eight Congress. It is clear now that Col. Myer's appointment had defaulted through constitutional (or statutory) limitation. In plain English, Stanton had not sent his name to the Senate at all. So, Col. Hume's assertion that the appointment expired as of that date leads to the incorrect assumption that it had been made for a definite term only. Whereas it expired only because it had not been submitted to the Senate for the confirmation that would validate it.

Col. B. F. Fisher, Signal Officer at the Washington Bureau in the fall of 1866, had much the same experience. When the failure-to-confirm notice finally reached him, the A. U. S. had long since demobilized. And since Col. Fisher was of the Volunteer component, he immediately became a civilian; the resignation he sent in was not a factor in his separation from the service.

nessee, was handled much more roughly than his predecessor. For there is a great deal of difference indeed between being relieved from duty and assigned to other duty elsewhere, and being dismissed by presidential order from the service of the United States.[30] There is even more similarity between the case of Colonel Nicodemus and that of Surgeon General Hammond, who was shamefully dealt with.[31] Throughout the War of the Rebellion, the Signal Service and the Medical Department were continually at sword-points with the impassioned and prejudiced War Secretary. On the contrary, the easy-going efficiency of Quartermaster-General Meigs, and the confidence inspired by Superintendents Eckert and Stager of the M. T. C.—both intimates of Stanton—put their respective Departments in an enviable position.

This is especially notable in the Telegraph Corps, which was so ably administered by its responsible chiefs that seldom was the Secretary of War required to take a hand in its affairs.[32] Furthermore, the fact that

[30] Col. Nicodemus' offense in omitting to furnish the Secretary of War with a draft of the Annual Report of the Signal Service for 1864, was a reflection on his executive ability, but scarcely justified Stanton's charges that in printing and distributing the same without the War Department's sanction he furnished information to the enemy (and the word "unwittingly" does not appear, either!); this was plainly an outrageous distortion.

Col. Nicodemus appeared to have no disposition to contest the cause with Stanton . . . the real source of the dismissal. The President doubtless let the Secretary write his own ticket in matters affecting his own Department. At all events, he probably was aware that "Dismissal by Executive order is quite distinct from dismissal by sentence. The latter is a *punishment*; the former is *removal from office*," (*Digest* . . . p. 819) to which no dishonor is necessarily attached. (Prior to 1866, the presidential power of dismissal was considered vested in the Chief Executive by constitutional authority, like the power of appointment. In 1866 the dismissal power was re-affirmed in the Ninety-Ninth Article of War. Today it is included in the One Hundred and Eighteenth Article.)

[31] It will be recalled that Dr. Hammond was sent away on a pretext while Stanton's hirelings "audited" his hospital and ration-accounts. Haled before a General Court which was as crooked as the evidence, Dr. Hammond was first acquitted; then the Court re-convened in considerable haste and reversed itself! Dr. Finley, who preceded Dr. Hammond, had tendered his resignation because he could not make a go of it with the Secretary.

[32] With the exception of the matter of U. S. M. T. C. employee status, Col. Stager was able to leave Stanton pretty much alone. But the matter of status was never satisfactorily settled, and there was a certain amount of grumbling over the pay-scale, too. Most operators made but sixty dollars a month and felt they could manage better as enlisted men drawing rations and entitled to quarters at Government expense. Mr. P. H. Watson, an Ass't. Secretary of War, Col. Stager, and the then-Major Eckert, worked out a plan to commission their operators outright. This was some time in December 1862. Stanton hemmed and hawed and finally said he was quite satisfied with the way things were and preferred that his operators maintain their civil estate; commissioning them" . . . would only enable every superior officer to command them; a result he was most anxious

the *American Telegraph* people had rallied 'round the Administration and supervised the over-night organization of the U. S. M. T. C.—even to the extent of advancing the funds to defray its first seven months' operating expense—disposed the Secretary favorably towards the Corps which was, in many respects, an affiliate of the *American* under government direction. The resistance met with at any suggestion of the executive officers of the Corps to take it into the Army proper, doubtless stems from Stanton's cognizance of the Administration's debt to the *American*, which shied away from the notion of uniformed men in charge—technically—of its facilities. Nor was the Government's obligation to the *American* wholly discharged by the appointment of President E. S. Sanford, of the *American* to the office of Chief of Military Telegraph Censorship in grade of Colonel.[33] The plain fact is that the Telegraph Corps, quite apart from the immensely vital service it rendered the Union, was represented at Court by interests even more powerful than Major Myer suspected. It was, in addition, the President's delight and Stanton's joy. The daily—the hourly, rather—personal contact of the Telegraph Corps operators at the War Department Office, continuing day after day and month after month, operated to give the Corps an immense advantage over the Signal Service by virtue of the powerful prejudice in its favor that was slowly building in the mind of the President and the Secretary of War. The Chief and his Secretary practically lived in the War Department Office. They kibitzed over the shoulders of the operators; they shared their lunch-boxes; they took an interest in the work of the cipher-clerks. Lincoln relaxed in the presence of the operators and the code-clerks. He got off his anecdotes with perfect ease of mind. Stanton acted more like a human being and looked less like a lemon in the telegraph-room than anywhere else in Washington.[34] Superintendent Eckert—a powerful

to avoid." (Plum, *op. cit.*, II, 114.) No doubt he *was* satisfied . . . but the operators were not. The evasion the Secretary resorted to with reference to commissions was unconvincing. For the legislation of the preceding January subjected the Telegraph personnel to the control of the Military as completely as though the operators were regularly enlisted or commissioned. (See Note 20, *supra*.)

[33] It is fitting to remark that the appointments of Eckert, Stager, and the several Superintendents and Assistant Superintendents of Telegraph in the various Military Departments, were Regular Army commissions bestowed for convenience of Government. For the Telegraph superintendents dealt frequently with the Q. M. C. in drawing supplies; the Quarter-Master General found no legal basis on which the requisitions of civilian employees might be honored. The wire-chiefs were in consequence appointed in the Quartermaster Department in grade from Captain to Colonel.

[34] *See* Bates, *op. cit., passim.*

man—was often the President's unofficial bodyguard;[35] he was no less intimate with Stanton.

What chance did Colonel Myer stand, with his dinky little field-telegraph service, against the might of the powerful Military Telegraph? Clearly, the latter with its far-flung network of wires, pulsing with the news of defeat or victory—the heart and the brain and the nerve-center of the Republic—was so inextricably bound up with the final Victory that no reasonable request relating to military wires could be refused it. Even had Col. Myer been one hundred per cent correct in his insistence on the Signal Service's efficient operation of the field-wires, he would have lost his point regardless.[36]

After November 10 1863, Colonel or rather, Major Myer for a time dropped quietly out of the contemporary scene. In May of the following year, he was appointed Chief Signal Officer of the Military Division of Western Mississippi.[37] Adversity had little effect upon him. He saw plenty of rough action in the field with signal detachments engaged in ship-to-shore liaison in the assaults on Forts Gaines, Powell and Morgan. No better choice of Signal Officer could possibly have been made for this particular Division. Farragut was making ready to reduce the City of

[35] The President, who was notoriously unconcerned about his personal security, often slipped his escort to stroll from the White House to the old War Department Building. Major Eckert generally considered it his duty to accompany him on his return, or to the Old Soldiers' Home—a favorite walk—despite Lincoln's objections. These little excursions were likely to be made at any hour of the day or night. In consequence, Major Eckert found himself alone with the President far more than any other man in Washington or anywhere else.

[36] The tactical importance of the electric telegraph was predicated on the assumption that the simultaneous-movement strategy—the Union's Grand Plan—would prove itself from the very beginning. For perfect coordination of forces scattered from New Orleans to Washington, telegraph communication had to be reliable as human ingenuity could make it.

But with the unexpected check at Manassas on July 21, 1861, the grand strategy struck a snag. The Armies of the West, which were fortunate enough to have commanders so competent as Grant, Thomas, Sherman, MacPherson, Logan, *et al*, continued to achieve success in splitting the Confederacy in twain by driving South along the Mississippi; while in the East, the Army of the Potomac had to be practically rebuilt from the ground up after each defeat and each change of Command, and in consequence fell behind schedule. Every Union feint at Richmond brought the Valley of Virginia the lurking columns of Confederate Cavalry thrusting toward the national capital. And the Grand Plan, beset with unanticipated difficulties, was never really put into effect until Grant faced Lee near Richmond while Sherman blocked the only other strong Rebel Army in North Carolina.

[37] This appointment was made by none other than General Canby, the officer under whom Myer had conducted his experiments in the New Mexico Department before the War. The Western Mississippi was a new department carved out of the Gulf, and Canby was one of the generals relieving Banks.

Mobile, and the General Service Code was of immense utility in this operation.

In the interim, Major Myer was of course contemplating the way and means of recovering the rightful office. He wrote direct to President Johnson a letter that stated his case without arrogance on the one hand; and without self-debasement on the other:

> I respectfully request that I may be restored to my position as Signal Officer of the Army. This can now be done under the act organizing the Signal Corps.[38]
>
> I have been the first Signal Officer of the Army; I have originated the Signal Corps of the Army, and have introduced the use of army signals into the navy in time of a great war, and under the greatest of difficulties.
>
> From the beginning to the end of the Rebellion no signals or equipment, and no plan for that service, other than those originated by me, have been used in our armies, or for the co-operation of our army and navy.
>
> The record of the services of the Signal Corps is my record. I have served the United States with my best ability and with success. I believe I am justly entitled to the position.
>
> I am, sir, etc. etc.[39]

He requested and received of U. S. Grant a strong recommendation for re-appointment. Thomas and Sherman were also invited to exert their influence on his behalf. But General Sheridan, similarly importuned, maintained silence for almost a year; had it not been for the good offices of a colleague, Col. Myer would never heard from him at all. Capt. Ocran H. Howard, associated with Sheridan at his New Orleans Headquarters in 1866, furnishes the explanation in an undated letter to Lt. Brown:

> When Gen. Sheridan placed all his accumulated war corespondence in my hands in New Orleans, I came upon the original of this [Myer's letter], marked by the general "No action," as you see. I took it at once to the general, in his private office, and asked him, as a favor me, to say something for the colonel. He said, "All right, Howard, I'll do it. I would have done it before if Myer had not been such a——old wire-puller. He wire-pulled himself from an assistant surgeon to a colonel in the regular army." He then wrote the endorsement . . . (Brown, *op. cit.*, 168-169.)

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[38] Not the temporary-organization Bill authorizing the Signal Corps for the duration of the Rebellion, which was passed March 3, 1863; but the legislation of 1866 which makes the Signal Corps an integral part of the U. S. Army for all time.

[39] Brown, *op. cit.*, 167. In all but one particular is this correct. For the equipment Myer used to supplement his rockets were the Coston Night Signals, a pyrotechnic flare of improved design. These he obtained through the regular commercial market. See Mrs. Martha J. Coston's memoir *Signal Success* (Philadelphia: Lippincott, 1886, p. 144-45), which prints a letter over the name of Albert J. Myer, Chief Signal Officer, U. S. A. . . . a testimonial to the efficiency of the flare.

In substance, General Sheridan is right; Myer was a pretty fair wire-puller. As for being "old," however, Col. Myer was but 39 in 1866, a scant four years older than Sheridan himself. General Sheridan may have been being whimsical, or he may have noticed in Myer a certain austerity of mien and bearing suggesting not so much age as a certain indeterminate agelessness, accompanied by a stiffness of manner, and calling for meticulous observance of the little graces and conventions of a military batchelor's middle years. Myer was not much older when he was dubbed "Old Statistics" for his Weather Bureau work—a sobriquet applied to a small army of statisticians, mathematicians, insurance company executives, and cryptographers.

The cool, dry detachment Sheridan may have observed in the Signal Officer was not limited to Myer's exterior; but seems to have characterized his whole attitude toward the Civil War. For Col. Myer was first and foremost a professional soldier through and through, and a professional soldier of a rapidly-dying type. I have come across no concrete evidence to sustain or disprove the hypothesis that Col. Myer not only refrained from talking shop but did not tax his mental powers to any extent over such question-marks as Slavery, Abolitionism, States' Rights, Sovereign Union, or Color Lines. But a reasonable inference may be drawn that Col. Myer considered himself primarily as a sort of communications engineer in the employ of a legitimate Government, whose instructions he received and acted upon and to which he abstained from offering his counsel except in the field of his specific employment.

Had an accident of birth bestowed upon Col. Myer the city of Alexandria, Virginia, say as a birth-place, with a few mental adjustments the C. S. O. could have served the Confederacy without developing a "damn-Yankee" complex, as effectively as he served the union without a "damn-Rebel" bias. The Signal was the thing—not the purpose it was being used for or the ultimate beneficiary of its service. Not even the message had any significance from the standpoint of its intelligible meaning and the information conveyed; only from the point of view that all messages are merely items of signal-traffic to be transmitted as expeditiously as is compatible with accuracy, do messages bear any significance to the professional communications engineer. It is difficult to visualize Albert J. Myer in the rôle of McClellan, who kept himself in a good humor by writing sheet after sheet of silly advice to the President on How the Country Should Be Run. Or, like flashy Joe Hooker, throwing his weight around as a prospective Dictator. The only subject Col. Myer claimed to

be adept in was the art of communication by signals. And he stuck to it.[40] The sanguinity and the detachment of the hired soldier have never been a mark of American armies—and during the Rebellion, due to the influx into the service of a great number of legislators and national and state officials who could hardly be expected to forget their old habits overnight, there was unquestionably far more meddling on the part of the Military in civil affairs than had ever been experienced in previous wars, or, for that matter, was to be experienced in wars of later date. In this connection, attention is invited to the fact that the Chief Signal Officer may have pulled plenty of wires, but he pulled them in signal communication affairs.

Ultimately, the fruits of Myer's diligent memorializing were realized; and on October 30, 1866, a year and a half after the surrender at Appomattox Court House, and about three years since his run-in with Stanton, Col. Myer was re-instated as Chief Signal Officer. The appointment was retro-active to July 28th current.[41]

From this point henceforth, the Signal Corps, in association with the Smithsonian, prosecuted peaceful tasks. Under Myer, the Storm Signal Service was inaugurated and the Signal Service, like the Medical Department in the past, found itself engaged in meteorological pursuits. Col. Myer was brevetted a Brigadier in 1869; and in 1880, two months before his death, became a Brigadier-General in fact.

The bearing of the hectic events of this former medical officer's career upon medical history of the past century may, it is presumed, be taken in judicial notice. The personal history of Albert J. Myer's war years

[40] Divorce of the Army from matters of State and Politics is well illustrated in the great armies of the French Republic in the early days of the Revolution, and before Napoleon I. The Commanders of these forces were quite indifferent whether the civil authority at the capitol were the Commune or the National Convention—the Committee of Public Safety or the Estates General—they merely asked that the government agents who accompanied the French armies on campaign produce *bona fide* proof of the power they alleged to represent. It is not suggested that this impersonal attitude toward the State is a characteristic of a good army; it is just pointed out that a good army possessed this characteristic.

[41] July 28, 1866 marked the adjournment of the Congress to escape the mid-summer heat. As of this date, Col. Fisher, former C. S. O., was effectively relieved from office. Myer may have had to waive his back pay from July 28 whether his appointment authorized it . . . as it may well have (*See Digest* . . . p. 850) . . . or not. Because Colonel Fisher did not vacate until November 15 and the pay and allowances of the office had been surrendered to him for services rendered. Nothing short of a separate Act of Congress would have authorized Col. Myer to collect after Col. Fisher had already cashed his drafts. Besides, Major Myer had himself been on active duty and had drawn his own pay in his grade of majority for that period. However, this is the writer's opinion—not that of the Judge Advocate General, whose 1862-1912 *Digest* . . . cites no similar case.

as head of the Signal Service is but a chapter in the biography of a general practitioner turned assistant regimental surgeon turned signal communications expert turned meteorologist—all in the brief span of fifty-three years.

Some notice might be taken of the willingness of the Army Medical Corps to claim as its own the thirty-three year old surgeon who, stuck forever at a First Lieutenant's pay, forsook Hippocrates in the very nick of time to furnish the A. U. S. with signal communication when it was to need it most. Colonel Hume's dictamen that

> General Myer never lost the physician's point of view, and in all his work sought to advance the idea of using his knowledge of climates and weather forecasting to prevent or diminish the incidence of disease. (*Op. cit.*, 68.)

leads him to the conclusion that the name Myer is the name of one of the great men of the Medical Corps (*Ibid.*).

In the *Bulletin of the History of Medicine* for April, 1943 (XIII: 4), an account of the Winter General Hospital in Topeka reveals that the Chief Signal Officer has been commemorated by Myer Road in that community, while Myer himself is described as "a distinguished field surgeon."[42] That fame is fleeting. Even the great captains and the publicists and the statesmen of the Civil War, now viewed but dimly through the mists of 1898 and 1914 and 1941, are but shadows. The politicians and the generals whose names were angrily shouted in Congressional debate . . . many of whom, the Press sombrely advertised, would stand forever reviled and accursed of posterity from coast to coast and for all time . . . all but the veriest handful have suffered the same fate as the Virtuous. Patriot and Copperhead, and the institutions they fought to demolish or preserve, have simply been forgotten. A tolerant Nation smiles upon those tests which recently demonstrated that young men and women think Jefferson Davis was in the White House at Washington during the Civil War, and confuse George Washington with Abraham Lincoln.

No number of memorials to Albert James Myer will do more than honor the memory of a memory; but it is gratifying that the Medical Department itself has now seen fit to make formal acknowledgment and claim of him jointly with the Signal Corps he founded. Memorials he

[42] I am not aware that Myer's service with the Medical Corps was other than a faithful and competent attention to duty. Any real distinction that he may have attained to, seems more suitably attributed to his work in the organization of the Signal Corps and in establishing the foundations for a modern Weather Bureau.

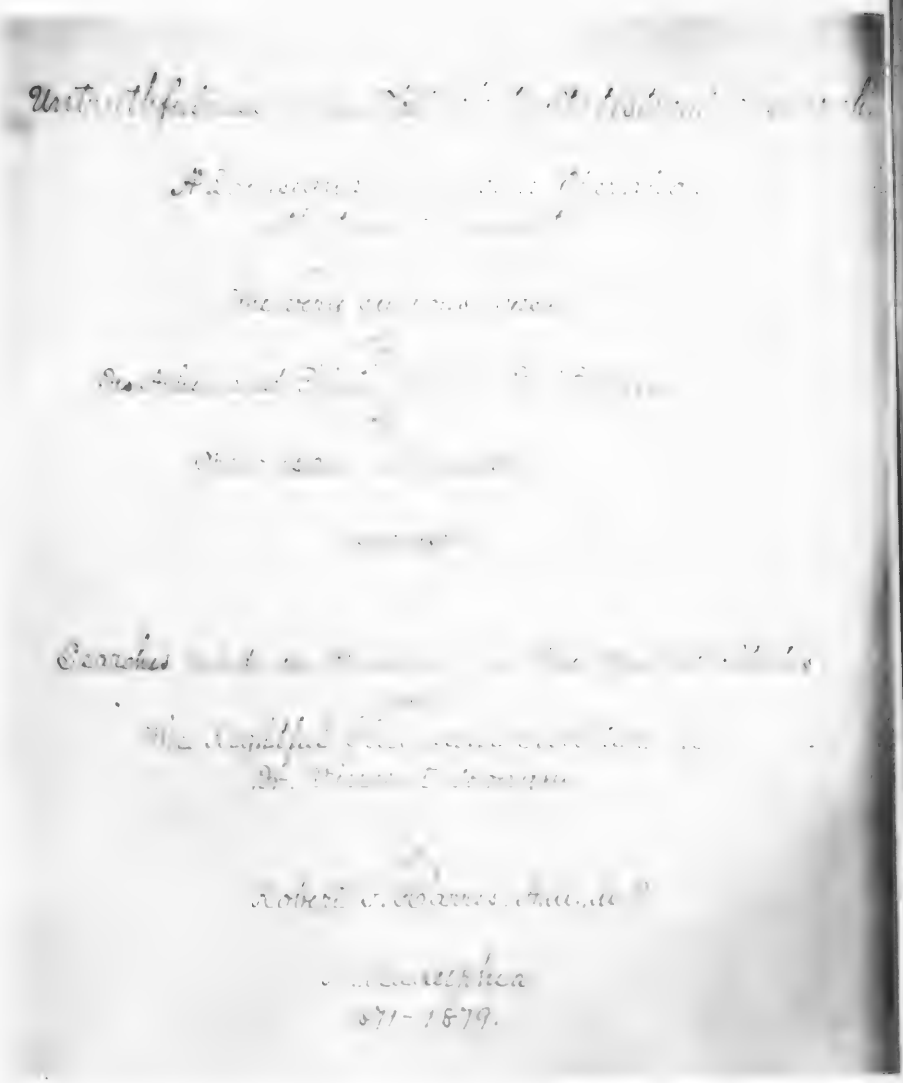
has had before. Fort Myer, Virginia—before his death Fort Whipple—the Signal Corps center and later a cavalry post, greater by far today than ever before, is a utilitarian monument to his name. If it lacks the symmetry and classic dignity of a Lincoln Memorial, and the grandeur of works in marble and bronze; if it is less permanent for all its usefulness, it may yet be said that when Grant's Tomb and the Washington Monument and the Rotunda of Thomas Jefferson are a heap of ruins, and when Fort Myer and Myer Road shall have vanished from the face of the earth—long, long before the first crack starts in those foundations, Grant and Washington and Lincoln and all the rest will have been utterly forgotten. Already the men and the issues of the great rebellion, the household words of yesterday, have vanished from the popular mind.

For the Present, however, it is clear that the life of Albert J. Myer, imperfectly known as it is, is integrally bound up in the medical biography of Nineteenth-Century America.

Appendix

Only at a late date have I learned the details of Major Myer's trip to Centreville mentioned *supra*. In response to his own request, he was given command of Chief Aeronaut John Wise's reconnaissance-balloon unit, and the lateness of his start for the front was caused by the delay in servicing the aerostat. An interesting and unique account of this episode has been culled from official unpublished records by F. Stansbury Haydon and published in his "Aeronautics in the Union and Confederate Armies . . ." (Baltimore: Johns Hopkins Press, 1941, I, 57 *ff*.)

The gist of it is that in his haste to get to the combat zone, Major Myer took one chance too many and hung his balloon in a tree. It was put out of commission in the aeronaut's efforts to dislodge it. It was from this point that Major Myer proceeded to his destination alone.



TEXTS AND DOCUMENTS

A CESAREAN SECTION WITH THREE CLAIMANTS

WILLIAM DOSITÉ POSTELL

Medical culture owes a debt of gratitude to the work of Dr. Robert Patterson Harris of Philadelphia, who has been described by Dr. Howard A. Kelly as the most prominent medical statistician this country has ever seen [1] (p. 533). Dr. Harris spent many years compiling statistics relating to Cesarean births and investigating the numerous reports of those who claimed of having performed this difficult operation.

In connection with this work Dr. Harris's researches were directed almost at first towards investigating the various reports of Cesarean births in the State of Louisiana, when he undertook to verify the record of Dr. François Marie Prevost, who was eventually given credit for performing the first Cesarean operation in the state about 1822 [2] (p. 939), and who for a long time was given credit for performing the first gastro-hysterotomy in what is now the United States.

In order thoroughly to canvass the state to obtain all the facts relating to the Cesarean sections performed, Dr. Harris enlisted the aid of Dr. Samuel M. Bemiss, then Professor of Principles and Practice of Medicine, Medical Department of the University of Louisiana, to assist him in circularizing the profession, and as a result Dr. Harris was able to assemble a total of 19 cases performed up to that time (1873), which was the largest number of operations performed in any state of the Union. So impressed was Dr. Harris with the number and success of these operations that he wrote, "In no State of the Union has the operations of gastro-hysterotomy been so often performed, and with such good proportionate results as in Louisiana . . ." [2] (p. 938). Dr. Harris commented that he was at a lost to understand the remarkable success of the Louisiana physicians in comparison to the rest of the country. He assumed that probably the skill of the French surgeons had something to do with it [3] (p. 345). From a recent study by Dr. Rudolph Matas [4] you are inclined to feel that this was the main factor in accounting for such a large proportion of successful operations; that is, the skill of the operators. The physicians of the state were largely of French extraction and had obtained

their education in Paris, the medical center of the world during the first half of the 19th century.

In April, 1878, Dr. Harris published a list of Cesarean operations, in which he gave credit to a Dr. Vincent Boagui for an operation performed at Opelousas, Louisiana in 1850 [5] (p. 336).

In June, 1879, Dr. Harris published an additional list of Cesarean sections giving credit this time to Dr. E. Pilate for having performed this operation, which he had previously credited to Dr. Boagui. He also credits Dr. Pilate with an additional operation in 1854. These cases are listed as 12 and 13 in this report. Further he had this comment to make: [6] (p. 934).

> Cases 12 and 13 gave me a great deal of trouble, as, strange to relate, they had each three claimants, and one of these had had them credited to himself through a French medical society twenty years ago. A second party also had case 12 recorded in his name, although a laborious investigation satisfies me that he was not even present at the operation. The third claimant has certainly established by abundant proof that he was entitled to be considered the operator in each instance; and this is the opinion of my medical friends, who have seen the letters and records of interviews in my possession. If either of the first or second claimant ever performed the Caesarean operation, it was not upon the woman in cases 12 and 13, as a package of letters before me gives these operations to Dr. Pilate, now 75 years old, and a resident for the last twelve of Dayton, Ohio.

Later, that is, in the March, 1880 issue of the *New Orleans Medical and Surgical Journal* [2] (p. 939-40) Dr. Harris published a correction to his second report, pertaining to cases 12 and 13, which he now, due to further evidence presented, again must credit to Dr. Boagui, the original claimant. In this paper Case Number 12, due to the change in dates is now listed as Number 11, while the second operation (13) is rejected as a true Cesarean, and listed as a laparotomy after rupture of the uterus.

Dr. Harris further commented that unfortunately Dr. Boagui was a poor witness for himself against the two other claimants, but finally obtained justice, by the fortunate discovery of two leaves of an old ledger among some waste papers, in which were recorded the entries made at the time of his two operations in 1850 and 1851, and that as Dr. Pilate expressed no desire to see this evidence against him, when forwarded to a mutual friend to be shown him, that he was forced to change his mind again and credit Dr. Boagui with the operation. Dr. Harris was most vigorous in protesting against the cunning manner in which Dr. Pilate attempted to establish his claim as the operator, which not only fooled him for a time, but several of his medical friends. Dr. Harris closed with the

comment that he hoped that there were not many Pilates, Achers and Dabrins (the first two were claimants for the honor, the third a witness) in the medical fraternity of Louisiana at the present day, for they gave the statistical worker, who desires to write correctly, a world of trouble.

And thus this case ended until our present day when something like 63 years later a very interesting manuscript came to light which for these many years had been deposited in the library of the late Dr. Howard A. Kelly. It bore the rather long and interesting title, " Untruthfulness, as an Obstacle to Statistical Research. A Louisiana Caesarean Operation with three Claimants. The very curious Case of Drs. Acher and Pilate, versus Dr. Boagui of Opelousas, Louisiana. 1850-1879. Searches made in France and the United States, and the Rightful Claimant credited, in Dr. Vincent Boagui. By Robert P. Harris, A. M., M. D., Philadelphia, 1871-1879 " (see plate). On examination this proved to be the evidence as assembled by Dr. Harris over a period of 13 months in investigating this case. The manuscript is in an excellent state of preservation and contains copies in Dr. Harris's own handwriting of all the correspondence compiled in assembling the evidence in this case.

The manuscript opens with a few introductory remarks by Dr. Harris in which he stated that Louisiana had been the chief center of Cesarean work in the early days of our country, and that with the help of Dr. Samuel M. Bemiss the state was circularized for any information pertaining to the performance of Cesarean sections by surgeons within the state. In response to a circular sent our by Dr. Bemiss a reply was received from Dr. Vincent Boagui of Opelousas, Louisiana, who reported three cases, performed by him on January 30, 1850, July 30, 1851 and May 4, 1853, although in the latter case the Mother died before he arrived.

Dr. Harris credited Dr. Boagui with these operations, until he received a letter from a Dr. John C. Reeve of Dayton, Ohio, who stated that Dr. E. Pilate, city physician of Dayton, had remarked to him that while living in Louisiana, he had twice performed the Cesarean operation on the same woman. On inquiry Dr. Pilate reported that he had performed a Cesarean section on a colored woman, Lucie, then about 28 years of age in 1852 in the presence of his friend Dr. F. Acher. About 20 months later, he reported performing a second operation on the same woman.

Dr. Harris then wrote twice again to Dr. Boagui and received in reply rather irrevelant or erratic answers, as if he cared very little if he was credited with the operations or not.

A long series of letters followed to the various parties involved and

their replies, until you wonder how Dr. Harris ever was able to unravel the mystery. Dr. Pilate's claim at first seemed by far the most logical. He stated his case quite clearly, always presenting evidence as to his character and veracity. However, in time, one gets a little suspicious of Dr. Pilate's claim, since he continually protests that he doesn't want to have anything to do with the case and this is his last letter etc., but he always comes back in a rather whinning manner protesting his opponents statements or claims, and presenting himself as being persecuted. Towards the end he becomes very personal and slanderous in his remarks concerning the other claimants, which tends to arouse your suspicions still more.

The matter was further complicated by Dr. Acher (one of the claimants) having published at Lyons, France, these two operation, purported to be his own.[7] To clarify matters Dr. Harris finally located Dr. Dabrin, who had been present at the operations, and as he was the only one of the four present who made no claim as to being the operator, Dr. Harris was hopeful that Dr. Dabrin would be able to give a correct version of the affair. In this he was disappointed. Dr. Dabrin reported that Dr. Acher performed the first operation, assisted by Dr. Pilate and himself; the second he credited to Dr. Pilate; and the third a case of rupture of the uterus, operated on after death, to Dr. Boagui.

Dr. Boagui seemed from his letters to be enjoying the controversy immensely. He was fond of quoting passages in Latin, French and Italian, which seemed to have infuriated Dr. Pilate. It was only towards the end of the controversy that he became serious and attempted to prove his claim. Then, it was, that he found his original entries covering these operations in an old ledger, which in the opinion of Dr. Harris and his friends had every appearance of being genuine. This evidence satisfied Dr. Harris that Dr. Boagui was the operator, and finally after thirteen months of investigation, he so credited Dr. Boagui with these cases.

The final summary of the controversy as presented by Dr. Harris at the conclusion of his manuscript is so interesting that it is here given in its entirety.[8]

General Summary

Dr. Boagui, claims to have performed a Caesarean operation on Jan. 30th 1850, on a woman aged 22 — child a male, dead. His second operation, was a Coeliotomy, after rupture of the uterus, on July 30th 1851 — child a female, dead. His third operation was also a Coeliotomy, after death of the mother, on May 4th 1853 — from rupture of the uetrus.

Dr. (?) Pilate, claims to have performed a Caesarean operation on the same woman, on June 5th 1852 — woman 28 — a child male and dead. He claims

to have performed a second Caesarean Section on the same subject — 20 months later — child a female also dead: recovery in each instance.

Mr. Perrodin, credits the first operation to Pilate, and said he told him of it, the next day after he performed it.

Dr. Littell, had always supposed that the credit of the operations was due to Dr. Acher. Dr. Acher told Dr. Roy that he had performed both operations. Dr. Estorge says that in 1859 he gave him full notes of the operations to be published in France, which he had attended to.

Mr. Rocquet, credits Dr. Acher, assisted by Dr. Pilate — Dr. Boagui had performed a Coeliotomy in the second case: that the negress in a third pregnancy, had died of an attack of indigestion.

Dr. Estorge, credits Dr. Pilate with the first operation: says the second operation was a coeliotomy after uterine rupture, and says that Dr. Boagui performed it.

Dr. Acher, published at Lyons in 1860, what purported to be his two operations. He does not say he performed them, but he leaves the reader to infer that he did. The second is a very ingenious conception of an extra-and-intra-uterine pregnancy, the placenta remaining in utero, whilst the foetus and membranes have escaped by rupture, through the cicatrix of a former Caesarean operation, and been developed outside of the uterus. Such a Case I have seen; but I do not know of one as far back as 1851.

Dr. (?) Dabrin, gave the first operation to Dr. Acher, assisted by Dr. Pilate and himself, and the second likewise a Caesarean, to Dr. Pilate; and the third a case of rupture of the uterus, operated on after death, by coeliotomy, to Dr. Boagui.

This does not look like unravelling the mystery. The pertinaceous lying of the Franco-American exceeds belief. One told the truth and two lied. The truth teller injured his own case by his style of writing, so that at one time he was thought by some of my medical friends to be the liar—and the biggest liar to be the truth-teller.

The Dispute Closed

My next communication from Dr. Boagui entirely put at rest the pertinaceous claim of Dr. Pilate and showed the record of Dr. Acher to be without foundation. Had Dr. Boagui written his letters in a less erratic manner, mixing up English, French, Latin and Italian, they would have been considered as of more weight. Dr. Pilate wrote with much more force, and appeared to be telling the truth, although being a living liar for many years. He was not a graduate in medicine, and yet had plausibility enough, to be chosen the physician of several prominent planters, and to be elected the city physician of Dayton, Ohio. Instead of commencing to lie at 75, he had always been addicted to telling untruths and sticking to them.

When Dr. Boagui wrote his letter of April 15 1871, it was without dates; so I immediately wrote to him, and he supplied them, which I added to the said letter, and underscored with red ink as will be noted. These dates are quite different from those of Pilate, who made the first, January 5th 1852, and the second, 20 months later; both being Caesarean operations. He had evidently made the impression

whilst living in Louisiana, that he was the operator, so that when (enquiry) was made, the credit should be given to him.

What changed the whole complexion of the case was the finding by Dr. Boagui in Opelousas, of two leaves of an old ledger among some waste papers, that bore every appearance of age, in the colour of the paper, and the faded light-brown of the ink. These leaves were torn, but not materially defaced, and were evidently as old as their dates indicated. Here were the entire services recorded, in correspondence with the dates of his letter of April 5th 1871. The operations were noted, and the nocturnal visit.

These papers corresponding in dates, to the original letter of Dr. Boagui were sent to Dr. Reeve of Dayton, who notified Dr. Pilate of their arrival, and character, but he refused to call and examine them; so that Dr. Reeve was convinced, that he and Acher, both tried to steal Dr. Boagui's case. He said he would never have believed this of Dr. Pilate.

The Whole Story Condensed

On January 30th 1850 a Caesarean operation was performed in Louisiana, near Opelousas, by Dr. Vincent Boagui, on a slave of Mr. A. Rocquet, living on the Teche road. The said negress, was aged 22 — 5ft. high — a field hand — and in robust health. The operation took place on the third day of labour, when the woman was cold, and much exhausted. The foetus was a male, full grown and dead. The woman recovered in three weeks.

The case was communicated by the operator in answer to a circular of inquiry on April 15th 1871.

2nd Pregnancy — On July 30th 1851, this patient ruptured her uterus after a few hours labor; Dr. Boagui performed coeliotomy and she recovered in a month, although was indiscreet enough to eat unripe peaches on the fifth day, and suffered in consequence, from an attack of indigestion on the night of August 4th.

3d Pregnancy — On May 4th 1853, she ruptured her uterus at term, and died of internal haemorrhage. Dr. Boagui found her dead on arrival, opened her, but the foetus was dead. He believed that the placenta had been implanted over the seat of rupture.

In August 1858, the first and second operation, was claimed as his own, by Dr. Pilate of Dayton, Ohio, who brought so many letters to testify in his favour, that for some months he was thought by several medical brethren to be the rightful claimant; but at last Dr. Boagui discovered among some waste-papers two leaves of an old ledger, which he sent me, in which were three entries, corresponding with the dates sent me in 1871, for the two sections, and the night visit. Dr. Pilate had always claimed that the first and second operations were identical, that Dr. Boagui was not present, that Dr. Dabrin assisted him — and that Dr. Acher was present, but too much intoxicated to assist in any way.

Dr. Boagui said that Dr. Acher assisted him, and that he was called in consultation to operate.

In 1859, Dr. Acher sent to Dr. Bouchacourt of Lyons, a claim to the first operation which he describes as Caesarean, and the second, which is given as a unique utero-abdominal pregnancy, the placenta being in the uterus; amniotic cyst outside; and cord through the unclosed uterine wound. Dr. Bouchacourt when written to, sent me the original letter of Dr. Acher, describing *his* two operations.

As Dr. Dabrin was the only one present who made no claim, I hunted him up in the south of France, and sent him a long letter describing the three claims, and asked him to give me the truth as an impartial witness. He stated as the 'exact truth' that both operations were Caesarean; that Dr. Acher performed the first, and Dr. Pilate the second, and confirmed all that Pilate stated, except his claim to the first operation.

Dr. Boagui explained away all that Dabrin had said, putting his statement down as a retaliative measure against him, and finally closed the case by discovering, and sending as evidence the ledger leaves mentioned. When Dr. Pilate heard of this he made no reply, and expressed to Dr. Reeve of Dayton, who had them, no desire to examine them.

This case took thirteen months, to fully settle.

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WOMEN AS PHYSICIANS IN THE UNITED STATES 1850–1900

A LIST OF THE PUBLICATIONS ISSUED DURING THE PERIOD WHICH ARE FOUND IN THE LIBRARY OF THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA

COMPILED BY

IDA J. DRAEGER, *Librarian*

In this bibliography are listed the publications in the Library of the Woman's Medical College of Pennsylvania which record the early struggle for the education and recognition of women as physicians in the United States. European literature, although it doubtless influenced opinion in America to a marked degree, has been included only when specific references are made to the American situation.

Dr. Mary Putnam Jacobi characterizes the history of the movement as "a record not more of fact, than of opinion." [1] Since the Woman's Medical College of Pennsylvania, organized in 1850 under the title, "Female Medical College of Pennsylvania," was the first college in the world regularly organized for the education of women for the medical profession, the College announcements and the addresses made at the annual convocation and graduation exercises by some of the early leaders of the movement reflect the trend of feeling on the subject especially well. Those which the Library has in its collection are listed chronologically, as are the reprints of other articles and books written during the period in the interest of women physicians.

Medical papers and articles written for medical journals by women physicians during the period from 1850 to 1900 are not included in this list because they have been listed by Dr. Clara Marshall [2] and Dr. Mary Putnam Jacobi [3] in contemporary publications.

I. INTRODUCTORY AND VALEDICTORY ADDRESSES DELIVERED AT

(a) The Female Medical College of Pennsylvania

*1. Longshore, Joseph S. An introductory lecture . . . Oct. 12, 1850. Phila., Young, 1850. 28 p. (incl. appendix).

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[1] p. 78, no. 51. [2] p. 81, c, d. [3] p. 81, b.

* Asterisk indicates that item is listed in Index-Catalogue, 1st and 2d series.

An outline of the subjects which were to be taught in the College. The lecturer points out that he sees no reason why "the exercise of the healing art should be monopolized by the male practitioner, as is the case at the present time." — p. 10.

*2. ———. A valedictory address . . . Dec. 30, 1851. Phila., Published by the graduates, 1852. 16 p.

The author gives permission for the printing of this, the first annual commencement address, with the hope that "its publication will tend to promote the great cause of Female Medical Education." — Correspondence printed in the Preface.

*3. Cornell, William M. An introductory lecture . . . Sept. 13, 1852. Phila., Harris, 1852. 16 p.

The lecturer states the reasons for the medical education of women who desire to enter the profession, summarizing his statements with — "We admit that woman has her own sphere in which to act, as much as man. She *is* better calculated for some duties, than for others, and we maintain that there are none, within the whole range of these duties, for which she could have been better designed, or more in her sphere of usefulness, than in this of medicine."—p. 15-16.

4. Harvey, Ellwood. Valedictory address . . . for the session 1854-55. Phila., Register association, 1854. 14 p.

"Your position is peculiar. The imperative demand that exists for your presence in our profession, the urgent call of the sick and suffering of your own sex . . . will secure you at once a share of practice much greater than usually falls to the lot of the young physician." — p. 13.

5. Preston, Ann. Introductory lecture . . . for the session 1855-56. Phila., Anna E. M'Dowell, Woman's advocate office, 1855. 14 p.

"Our day will come; we will work in faith and bide our time." — p. 8.

6. Fussell, Edwin. Valedictory address . . . for the session 1856-57. Phila., Ketterlinus, 1857. 15 p.

Mentions the "attributes of the good physician" and challenges the members of the graduating class to prove that both men and women are needed in the profession, each with his or her special "virtues."

*7. Cleveland, Emeline H. Introductory lecture . . . for the session of 1858-59. Phila., Merrihew & Thompson, 1858. 13 p.

Outlines the history of the movement for higher education for women, and challenges the students to put forth their best efforts.

*8. Preston, Ann. Valedictory address . . . for the session of 1857-58. Phila., Ketterlinus, 1858. 13 p.

"Fitness and capability will vindicate themselves against the world: they are God's endorsement of the rightfulness of any position." — p. 12.

*9. ———. Introductory lecture . . . 10th annual session, Oct. 19, 1859. Phila., Ketterlinus, 1859. 15 p.

"A rapid review of a few of the salient points of the studies in which you engage and the cause with which you identify yourselves." — p. 14.

*10. Coates, Reynall. Introductory lecture . . . 11th annual session, Oct. 17, 1860. Phila., Merrihew and Thompson, 1861. 16 p.

A discussion of the status of medical education for women at the beginning of the second decade of the history of the Female Medical College of Pennsylvania.

11. Fussell, Edwin. Valedictory address . . . 10th annual commencement, Mar. 13, 1861. Phila., Chandler, 1861. 12 p.

The lecturer comments at some length upon the leisurely private life which the graduates might have enjoyed, but commends them for their choice of medicine as a career.

*12. Cleveland, Emeline H. Valedictory address . . . at the 11th annual commencement, Mar. 14, 1863, with announcement of the 14th annual session. Phila., Crissy & Markley, 1863. 16 p.

"We would not omit this opportunity to congratulate ourselves and you upon the present aspect of our common cause." — p. 4. "Establish your claim to recognition and fellowship by years of patient work and waiting." — p. 11.

13. Selections from notices of the press on the Valedictory address . . . at the 11th annual commencement, Mar. 14th, 1863. Phila., King & Bard, 1863. 13 p.

A collection of the comments printed in newspapers on the address made by E. H. Cleveland, M. D.

14. Fussell, Edwin. Announcement of the 16th annual session . . . with the introductory address [abridged] . . . Oct. 12, 1864. Phila., Rodgers, 1865. 16 p.

". . . thoughts on who should study medicine." Assumes that "women as well as men should be physicians." — p. 8.

*15. Preston, Ann. Valedictory address . . . 12th annual commencement, Mar. 16, 1864. Phila., Young, 1864. 16 p.

Briefly outlines progress in the opening of the field of medicine to women and mentions new fields of scientific investigation relating to it.

16. Kerr, Mark G. Valedictory address . . . 14th annual commencement, Mar. 17, 1866. Phila., Rodgers, 1866. 18 p.

Advises, "Physician, cultivate thyself," and assures the graduates that "what men have done for the development of science, you will do for its humanity." — p. 15.

17. Scarlett, Mary J. Valedictory address . . . Mar. 16, 1867. Phila., Spangler & Davis, 1867. 7 p.

"The change in public opinion in regard to the capability of woman to practice medicine has been so great in the last few years that you will have far less prejudice and opposition to encounter than those had who have gone before you."—p. 4.

(b) The Woman's Medical College of Pennsylvania

18. Bodley, Rachel L. Introductory lecture . . . 19th annual session, Oct. 15, 1868. Phila., Merrihew & son, 1868. 20 p.

A tribute to the memory of Isaac Barton, an important College benefactor.

*19. Cleveland, Emeline H. Valedictory address . . . 16th annual commencement, Mar. 14, 1868. Phila., Rodgers, 1868. 12 p.

"The conclusion is already foregone, even in circles where marked opposition has prevailed that women have the most natural claim to participation in . . . the medical profession." — p. 6.

*20. Preston, Ann. Valedictory address . . . 18th annual commencement, Mar. 12, 1870. Phila., Loag, 1870. 15 p.

Advice on several phases of the woman physician's life is given to the graduates and references are made to expressed needs for women in certain fields of medical work.

*21. Hartshorne, Henry. Valedictory address to the 20th graduating class. Phila., Rodgers, 1872, 14 p.

"As to the fitness of women for the medical vocation, I will not now go over the familiar argument. . . . My own mind has attained to the conviction . . . there are some qualities in their mental constitution which are especially favorable to their usefulness as medical practitioners." — p. 6.

22. Bodley, Rachel L. Valedictory address to the 22d graduating class . . . Mar. 13, 1874. Phila., Rodgers, 1874. 15 p.

Reviews the strides made in the 19th century by women leaders and enlists the graduates' aid in pushing forward into new fields.

23. Hunt, J. Gibbons. Introductory lecture . . . Spring course, 1875. Phila., Culbertson & Bache, 1875. 16 p.

"Your individuality as *women*, embellished with all professional power and knowledge to heal the sick, will teach men to think more generously and justly of you." — p. 16.

24. Scarlett-Dixon, Mary J. Valedictory address to the 23d graduating class . . . Mar. 11, 1875. Phila., Grant, Faires & Rodgers, 1875. 16 p. — incl. appendix.

A review of the first 25 years of College history.

Appendix consists of (a) an account of the laying of the corner-stone of the New building . . . Oct. 1, 1874; (b) an account of the opening of the New building, Mar. 11, 1875; (c) a record of the remarks at these two occasions.

25. Bodley, Rachel L. Introductory lecture . . . 26th annual session . . . Oct. 7, 1875. Phila., Grant, Faires & Rodgers, 1875. 14 p.

Contains an appeal to members of the student group that some students consider medical missionary work, especially in India, as their possible life-work, since a number of vacancies are reported through death and retirement.

26. White, Frances Emily. Valedictory address . . . Mar. 10, 1880. Phila., Grant, Faires & Rodgers, 1880. 16 p.

A strong plea for the recognition of women in all fields of science.

"The American woman of today has no distinct sphere adequate to her abilities." — p. 14.

*27. Bodley, Rachel L. Valedictory address to the 29th graduating class. Phila., Grant, Faires & Rodgers, 1881. 16 p.

"I will show the young graduates the work accomplished by Alma Mater in the person of her daughters throughout the thirty years gone." — p. 3.

28. Parish, William H. Valedictory address to the graduating class . . . Mar. 15, 1883. Phila., Grant, Faires & Rodgers, 1883. 15 p.

"Your diploma is from an institution that feels the pride and strength which come from conscious worth." — p. 4.

29. Croasdale, Hannah T. Valedictory address . . . Mar. 13, 1884. Phila., Hoskins, [1884]. 12 p.

A brief review of the status of women in the medical education field, and some advice to graduates concerning professional attitudes.

30. Marshall, Clara. Valedictory address . . . Mar. 11, 1886. [Phila., 1886]. 9 p.

Examples of the outstanding work done by some of the early graduates of the College are enumerated to show what has been accomplished by women physicians.

31. White, Frances Emily. Hygiene as a basis of morals: Address to graduates at the 24th annual commencement . . . Mar. 17, 1887. N. Y., Appleton, 1887. 16 p. (Reprinted from *Popular Science Monthly*, May, 1887.)

The value of *preventive* medicine is stressed, and the graduates are urged to contribute what they can to this phase of medical work.

32. Roberts, John B. The need of common-sense in medical practice: An address to the graduates . . . May 4, 1892. 9 p. (Reprinted from *Medical News*, May 7, 1892.)

Gives general advice and then points out the need for special skills necessary for treatment of women patients, since "much of your practice will be among women." — p. 6.

33. Fullerton, Anna M. Woman in medicine: Her duties and responsibilities. An address to the graduates . . . May 3, 1893. [Phila., 1893]. 16 p.

*34. White, Frances Emily. The American medical woman: Address delivered to the graduating class . . . May 1895. 16 p. (Reprinted from *Medical News*, Aug. 3, 1895.)

An historical outline of the progress in the recognition of women's medical abilities.

35. Bundy, Elizabeth R. Introductory address . . . Sept. 30, 1896. 12 p. (Reprinted from the *Medical and Surgical Reporter*, Oct. 10, 1896.)

Interesting because of the sound advice given to students.

36. Leffman, Henry. Address to the graduating class . . . at the 44th annual commencement, May 6, 1896. 7 p.

An historical survey emphasizing the fact that in ancient times, men and women practiced the "healing arts."

37. Fullerton, Anna M. The study of medicine: Address to the Corporators, Faculty and students . . . Sept. 29, 1897. 8 p. (Reprinted from the *Medical and Surgical Reporter*, Oct. 9, 1897.)

II. Other Papers Referring to the Progress Made in the Education and Recognition of Women Physicians.

38. Hale, Sarah J. An appeal to American Christians on behalf of the Ladies' missionary society. (Reprinted from *Godey's Lady's Book*, 1852, *64*, 185-188.)

Outlines a plan for encouraging women missionaries, married and unmarried, to take medical training to better fit themselves for work among women and children in foreign missionary assignments.

*39. Livezey, Abraham. Lecture, introductory to the course, on the practice of medicine to the class of the N. E. Female medical college, delivered Feb. 17, 1852. Boston, Alfred Mudge, 1852. 14 p.

"Woman has been endowed with talents equal to her assumed lord and master . . . when properly educated, and possessed of a knowledge of the many ills 'to which flesh is heir,' how favorable will *her* character contrast with that of *his*." — p. 11.

*40. An appeal in behalf of medical education of women. N. Y., 1856. 16 p.

An appeal for funds and support for a woman's hospital in New York. Signed by an impressive list of the pioneers in medical education for women.

*41. [Blackwell, Elizabeth and Blackwell, Emily]. Medicine as a profession for women. N. Y., Trustees of the New York infirmary for women, 1860. 24 p.

"A lecture prepared as an exposition of the effort now being made in this city to open the profession of medicine to women" (footnote, p. 1).

42. Longshore, Joseph S. Introductory lecture delivered in the Female department of the Penn medical university of Philadelphia, Oct. 1, 1860, being a review of the action of the Pennsylvania state medical society, in relation to female physicians and female medical colleges. Phila., Harbach, 1861. 18 p.

43. Preamble and resolution of the Philadelphia county medical society upon the status of women physicians, with a reply by a woman. [Phila., Stuckey, 1867].

44a. Women as physicians. Resolution adopted by the Philadelphia county medical society, in a discussion upon the status of women as practitioners of medicine. Reply by Ann Preston, M. D., dated Apr. 22, 1867. (Reprinted from the *Medical and Surgical Reporter*, Apr. 6 and May 4, 1867.)

44b. Women as physicians. [Phila., 1875.]

A republication of Dr. Preston's communication of Apr. 22, 1867, which appeared in the *Medical and Surgical Reporter*, May 4, 1867, with addi-

tional information regarding the Woman's Medical College of Pennsylvania.

45. Association for the advancement of women. Papers read at the 4th Congress of women, held at St. George's hall, Philadelphia, Oct. 4-6, 1876. Washington, D. C., Todd, 1877. 128 p.

The papers presented at the Congress show the outlook at the time, for the higher education of women in science and other fields.

46. Graham, D. W. The demand for medically educated women. The doctorate address delivered at the commencement exercises of the Woman's medical college of Chicago, Apr. 6, 1886. *Journal of the American Medical Association*, 1886, *6*, 477-480.

*47. Jex-Blake, Sophia. Medical women. Two essays. 2d ed., with appendix. Edinburgh, Oliphant, Anderson and Ferrier, 1886. 256 p.

Contents: I. Medicine as a profession for women.
II. Medical education for women. (The American situation is reviewed, p. 246-252.)

*48. [Corson, Hiram]. A brief history of proceedings in the Medical society of Pennsylvania, in the years 1859, '60, '66, '67, '68, '70 and '71, to procure the recognition of women physicians by the medical profession of the State, to which is added an account of the measures adopted by the Society at its annual meetings in 1877, '78, '79 to procure a law to authorize trustees of hospitals for the insane poor, under control of the State, to appoint women physicians to have entire control of the insane of their sex. [1st ed.]. Phila., Rodgers, 1888.

49. Corson, Hiram. (same title as above.) [2d ed.]. Norristown, Pa., Herald, 1894.

50. Weintraub, Louise. What has been accomplished at the Philadelphia county prison under women. (In Transactions of the 16th annual meeting of the Alumnae asso. of the Woman's medical college of Pennsylvania, May 7-8, 1891. Phila., Penfield, 1891. p. 106-108.)

51. Jacobi, Mary Putnam. Woman in medicine. (In Woman's work in America, edited by Annie Nathan Meyer. N. Y., Holt, 1891. p. 139-205.)

A summary of the work of early pioneers in America, the Blackwell sisters, Ann Preston, Emeline Cleveland, Hannah Longshore, and others. A thorough account, with many footnotes referring to original sources.

52. Cheney, Ednah Dow. Care of the sick. Hospitals and training schools for nurses managed wholly or in part by women. (In Woman's work in America, edited by Annie Nathan Meyer. N. Y., Holt, 1891. p. 346-348.)

Includes a brief discussion of the work of women physicians in hospitals founded for the medical education of women.

53. Rutherford, Frances A. The new force in medicine and surgery. (Reprinted from Proceedings of the Michigan state medical society, 1893.) 7 p.

The influence which women have exerted through the years since they were admitted to the practice of medicine is the theme of this paper.

*54. Blackwell, Elizabeth. Pioneer work in opening the medical profession to women. Autobiographical sketches. London, Longmans, 1895. 267 p.

An interesting account of the struggle the author had in securing her medical education. Unsuccessful interviews with Philadelphia physicians and medical school officials are described on p. 58-64.

55. Rabinowitsch, Lydia. Das Studium der Medizin in verschiedenen Ländern. (Reprinted from Vorträge des Internationalen Congress für Frauenwerke und Frauenbestrebungen, Berlin, 1896. Berlin, Walther, [1896]. p. 180-184.)

A short survey of medical education for women with emphasis upon the situation in the United States, particularly at the Woman's Medical College of Pennsylvania.

56. Marshall, Clara. The Woman's medical college of Pennsylvania: An historical outline. Phila., Blakiston, 1897. 142 p.

A valuable record of the struggle for the recognition of women as physicians is given in this account written by a woman well acquainted with the subject.

*57. Hall, Sarah B. A short sketch of the progress made by women in the medical profession during the last half century. *Woman's Medical Journal*, 1898, *7*, 31-38.

A contrast of conditions in 1848 and 1898.

58. Galbraith, Anna M. A thorough preliminary education a prerequisite of success in the practice of medicine. (Reprinted from the *Woman's Medical Journal*, 1898-99, [*8*, p. 1-6].)

Outlines the educational and social background upon which medical training was dependent in various periods since ancient times.

59. Marshall, Clara. Fifty years in medicine. 18 p. (Reprinted from *Virginia Medical Semi-Monthly*, Jan. *27*, 1899.)

An historical sketch which was read before the National American woman's suffrage association, Feb. 16, 1898.

60. Everitt, Ella B. Timely suggestions to the recent graduate. Address before the Medical society of the Woman's medical college of Pennsylvania. *Woman's Medical Journal*, 1900, *10*, 283-288.

61. Alumnae association of the Woman's medical college of Pennsylvania. Transactions of the 25th annual meeting, May 17-18, 1900. Philadelphia, 1900.

The short addresses and reports presented at this meeting summarize the status of women as physicians at the close of the 19th century.

III. Biographical Publications About Pioneer Women Physicians

62. Papers read at the memorial hour commemorative of the late Professor Emeline H. Cleveland, M. D. . . . Mar. 12, 1870. [Phila.], n. p., 35 p.

Contents: Tributes from Faculty, students, Alumnae association, medical friends not connected with the College, and the Board of corporators.

63. Judson, Eliza E. Address in memory of Ann Preston, M. D., delivered by

request of the Corporators and Faculty of the Woman's medical college of Pennsylvania, Mar. 11, 1873. [Phila.], n. p. 29 p.

64. Memoir of Susan Dimock, Resident physician of the New England hospital for women and children. Boston, 1875. 103 p.

"Most truly did she illustrate the words of Dr. Willard Parker, of New York: 'A doctor is born, not made: and is found, naturally, in both sexes.'" — p. 54.

65. In memory of Mary Putnam Jacobi, January four, 1897, Academy of medicine, New York. N. Y., Woman's medical association of New York city, 1897. 85 p.

Contents: Addresses honoring Dr. Jacobi by Dr. William Osler, and others.

APPENDIX

Announcements of Courses of Study Offered in Some of the Medical Colleges for Women, 1850-1900.

Female medical college of Pennsylvania. Annual announcement, 1st, 4th-8th, 10th-17th, for the session 1850-51, 1853-54 – 1857-58, 1859-60 – 1866-67. Phila., 1850, 1853-1857, 1859-1866. Continued by –

Woman's medical college of Pennsylvania. Annual announcement, 18th-51st, for the session 1867-68 – 1900-01. Phila., 1867-1900.

Female medical college of Pennsylvania and New England female medical college. Announcement to a course of medical lectures to women in the city of Boston, . . . to commence on Monday, Feb. 16, 1852 and continue for four months. Boston, Printed for the Faculty, 1851. 12 p.

*Penn medical college of Philadelphia. Female session. Fall announcement. Phila., Harris, 1853. 16 p.

*Woman's medical college of Georgia and training school for nurses, Atlanta, Georgia. First annual announcement. Session of 1889 and 1890 . . . Oct. 1, 1889 – Mar. 1, 1890. Atlanta, American book & job printer, 1889. 12 p.

*Presbyterian hospital and Woman's medical college, Cincinnati, O. Annual announcement for 1892. Cincinnati, O., Elm street print. co., 1892. 16 p.

——— Annual announcement, session of 1893-94. Cincinnati, O., Elm street print. co., 1893. 19 p.

Woman's medical college of 262 W. Eighth street, Cincinnati, O. Announcement . . . session of 1893-94. [Cincinnati, O.], Trustees, 1893. 16 p.

*Woman's medical college of Cincinnati, O. Announcement . . . session of 1894 to 1895. Cincinnati, O., Clarke & co., 1894. 20 p.

Woman's medical college of Kansas City, Mo. First annual announcement . . . [opening Oct. 15, 1895, and continuing six months]. Kansas city, Hudson-Kimberly pub. co. [1895].

Woman's medical college and Woman's hospital of St. Louis. Annual announcement, 1895. [St. Louis, 1895.]

Woman's medical college of the New York infirmary for women and children. Final catalogue and announcement, June 1899. [N. Y., 1899.]

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a. Index medicus. v. 1-v. 21, Jan. 1879-Apr. 1899. N. Y., Leypoldt, 1879-99.

b. [Jacobi, Mary Putnam]. List of medical essays and communications written by women physicians between 1872 and 1890. (Appendix D, Woman's work in America, edited by Annie Nathan Meyer. N. Y., Holt, 1891, p. 441-445.)

c. Marshall, Clara (compiler). Titles of medical papers written by the alumnae of the Woman's medical college of Pennsylvania. (In Woman's medical college of Pennsylvania. Alumnae association. Report of the proceedings of the 20th annual meeting . . . May 9-10, 1895. Phila., Rodgers, 1895, p. 181-218.)

d. [Marshall, Clara (compiler)]. Titles of medical papers written by the alumnae of the Woman's medical college of Pennsylvania, prior to Jan. 1, 1897. (In Marshall, Clara. The Woman's medical college of Pennsylvania: an historical outline. Phila., Blakiston, 1897, p. 89-142.)

e. U. S. Surgeon-general's office. Library. Index-catalogue of the library of the Surgeon-general's office, United States army. Washington, D. C., Gov't print. off., 1880-1895.

f. —— ——— 2d series. Washington, D. C., Gov't print. off., 1896-1915.

g. Woman's medical college of Pennsylvania. [Public addresses, 1850-1881. Phila.] (binder's title).

h. ——— [Collection of addresses and annual announcements, 1887-1896. Phila.] (binder's title).

i. Woman's medical college of Pennsylvania. Alumnae association. Report of proceedings of the annual meeting, 9th-25th, Mar. 14, 1884-May 17-18, 1900. [Phila., The Association, 1884-1900.]

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ORIGINAL COMMUNICATIONS.

ART. I.—*Ship Fever. An Inaugural Thesis, submitted for the degree of M. D., at Geneva Medical College, Jan.* 1849. By ELIZABETH BLACKWELL, M. D.

The summer of 1847 was distinguished by the epidemic brought to our seaport towns by means of the crowded emigrant ships, which arrived in great numbers from Europe, Our hospitals were filled to overflowing with patients in every stage of the disease,—many died in the receiving wards, many more only entered the hospital wards to prove the inefficiency of the resources of medical art. An examination of the nature of this disease, showed it to be a species of Typhus.

Much discussion has arisen in the Profession, in relation to the distinction between typhus and typhoid fever. The majority of French writers, and high authorities in our own country, recognizing a distinct disease, under the latter title, or enteric fever, possessing most of the symptoms which mark typhus, but distinguished chiefly by a violent affection of the intestinal canal, producing diarrhœa during life, and revealing to anatomical investigation, a remarkable lesion of the mesenteric glands, and the glands of Peyer—while the English writers generally consider enteric fever as a form of typhus, and not possessing those peculiar characteristics which would entitle it to rank as a distinct disease. This latter opinion is well stated by Cruveilhier, who in this respect differs from the majority of French physicians,—he says:—

First page of Elizabeth Blackwell's Article on Ship Fever.

NOTES AND COMMENTS

ELIZABETH BLACKWELL: HER FIRST MEDICAL PUBLICATION

SAMUEL SANES

In 1847 Elizabeth Blackwell became the first regularly enrolled female medical student in the United States. Her entrance to Geneva College evoked much discussion in private circles and in the public prints. Among the editorial comments were those of Austin Flint in the *Buffalo Medical Journal*. With sly touches of raillery, but in a tolerant, encouraging tone, derived from open-minded analysis, tempered, though, by the general attitude of the time toward the status of woman, Dr. Flint remarked on the enrollment of Elizabeth Blackwell:

> . . . Geneva College will therefore be entitled to the distinction, meritorious or otherwise, of first practically exemplifying the experiment of opening the door of medical instruction to a female candidate for the medical profession.
>
> Several inquiries suggest themselves with the foregoing event. Is it likely that the example of Miss B. will be followed by other females. We think it by no means impossible that this will be the case. And we venture to predict, that, before many years, there will be far less difficulty than was experienced in the present instance, in finding a Medical Institution willing to entertain favorably similar application and that the fact of females qualifying themselves to become practitioners will have ceased to possess novelty. That females will become general practitioners is hardly to be expected, but that they may devote themselves successfully and usefully to special branches is not to be doubted. This has been sufficiently demonstrated in the instance of Mad. Boivin,[1] and others, who have been distinguished not only as practitioners, but as writers and teachers. We should regret to see any innovations tending to lead woman from her appropriate sphere—the domestic hearth, and the social circle; but we can perceive no good reasons why females whose duties are not prescribed by domestic or social relations, should be denied the privilege of obtaining a support, and of exercising usefully their faculties in the capacities of medical practitioners under proper limitations.
>
> . . . we are inclined to think that the exercise of the duties of the medical practitioner, is by no means, an exclusive prerogative of the lords of creation, but may be classed as belonging to the softer sex. . . .
>
> Another inquiry is what influence upon the character of the medical profession will be exerted by well-educated female physicians? The effect as it seems to us will be good. . . . Having fairly committed (without any affectation of gallantry)

[1] A famous French midwife (1773-1841).

our first impression on behalf of female medical education, we leave the subject for the present to be perhaps resumed at some future time.

That Austin Flint should have taken such personal, serious, and reassuring interest in the enrollment of Miss Blackwell may be explained in several ways. Geneva College was located not much farther than one hundred miles from Buffalo. On the faculty of eight in the University of Buffalo Medical School, which he has just helped to establish, Dr. Flint counted, as professorial colleagues, five members, who served at the same time on the teaching staff at Geneva where they must have participated in discussion of Miss Blackwell's application.[2] Indeed, one of these colleagues, Dr. Charles A. Lee, first occupant of the chair of materia medica and pathology in the Buffalo school, signed, in his capacity as dean at Geneva, the letter which apprized Miss Blackwell of her admission. Further, Austin Flint himself was a most energetic progressive physician with an imaginative, far seeing mind. No aspect of medicine escaped his attention. He labored for the advance of his profession in diagnosis, treatment, public health, organization, journalism, education.

On the experiment of Geneva College in the instruction of its female student, Austin Flint kept a watchful eye. In February 1848 again as editor of the *Buffalo Medical Journal*, he gave a brief accounting of Miss Blackwell's experience in her first academic term. The favorable reaction on the part of both the college and student, which he reported, along with the pertinent example of Madame Boivin which he now more forcibly, in fact, challengingly reiterated, in defense of woman's fitness to a place in medicine, and the prophetic question which he raised on the future of medical co-education seemed to imply that if Austin Flint were modifying at all his original attitude of tolerance, and encouragement, or even justification, he was perhaps broadening it to one of acceptance and sanction.

> There is some difference of opinion (Dr. Flint wrote) in the minds of medical men as regards the propriety of the course pursued by Geneva College in the matter, but we are not aware that any of the parties immediately concerned are dissatisfied. If any doubt the ability of females to become scientific practitioners in certain departments of our art, we might refer to Madame Boivin, who is not only an accomplished accoucheur, but eminent as a teacher and a writer. Will it ever be incumbent on the medical teacher to say "ladies and gentlemen," instead of "gentlemen"? Nous verrons.

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[2] Another colleague of Austin Flint, who was not of professorial rank in Buffalo, also taught at Geneva.

In 1849 when Elizabeth Blackwell was graduated from Geneva College, the Editor of the *Buffalo Medical Journal* announced the event, simply and manifestly, as accomplished fact.

> This lady, having attended two full courses of lectures at Geneva Medical College, and passed a satisfactory examination, received the degree of M. D. on the 23 ult. This, so far as we know, is the first instance of a female graduation at a medical college in this country. Miss Blackwell was refused admission as a pupil at several medical colleges. Her inaugural thesis as the reader will perceive is contained in the original department of this number of our Journal.

Not only then did Austin Flint announce, without reservation as to its propriety, the first graduation of its kind in the United States. By oblique expression, he reproached the schools that had not seen right to avail themselves of the distinction to initiate female medical education. But—what is most significant for us—he told of the unprecedented act through which he bestowed his own blessing upon Miss Blackwell. He had accepted for publication her inaugural thesis. Thus, in the *Buffalo Medical Journal* was printed the first article published by a female medical student and graduate of the United States. On this happening, no reference appears in modern texts on the history of women in American medicine. The title of Miss Blackwell's thesis is not listed in bibliographies of her chief works. In the autobiography—*Pioneer Work in Opening the Medical Profession to Women, 1895*—Dr. Blackwell made no personal mention of the publication of her thesis by Dr. Flint. She included, however, a letter written by a younger brother January 23, 1849, in which, describing various exercises connected with the graduation at Geneva, he informed the family. . . . "In the afternoon (the students) were successively called upon to read from their theses, and to this I was admitted; but Elizabeth's being in Buffalo to be printed, she could not be called upon."

Miss Blackwell's thesis occupied the leading position of the *Buffalo Medical Journal and Monthly Review* of February 1849. It was Article I under Original Communications. It ran from page 523 to page 531. There were no illustrations. The thesis was entitled "Ship Fever. An Inaugural Thesis, submitted for the degree of M. D., at Geneva Medical College, Jan. 1849. By Elizabeth Blackwell, M. D." Its expression in contrast to the ornate and prolix style, affected by many medical authors of the era, was forthright, plain and clear, practically journalistic. Its content was drawn from Miss Blackwell's experience as a clinical clerk at Blockley Almshouse, Philadelphia, during vacation between the first and second terms at Geneva.

In her opening paragraph Miss Blackwell set the background and scene of the subject which the thesis discussed:

> The summer of 1847 was distinguished by the epidemic brought to our seaport towns by means of the crowded emigrant ships which arrived in great numbers from Europe. Our hospitals were filled to overflowing with patients in every stage of the disease,—many died in the receiving wards, many more only entered the hospital wards to prove the inefficiency of the resources of medical art. An examination of the nature of this disease showed it to be a species of Typhus.

Following the introductory paragraph Miss Blackwell, qualified her use of the term typhus. She noted that the majority of French writers and high authorities in the United States differentiated between typhus and typhoid fever. Miss Blackwell, however, adhered to the practice of English authors and Cruveilhier among the French physicians who considered enteric (or typhoid) fever " as only a form of typhus and not possessing those peculiar characteristics that would entitle it to rank as a distinct disease." Under " Ship Fever " Miss Blackwell likely classified cases of both typhus and typhoid fever.

It is interesting to recognize, already coloring certain portions of her student thesis, those points of view which were to comprise in the main Miss Blackwell's outlook in medicine for the rest of her long life—a feminine sensitivity to human suffering; a strong insistence on the importance of sanitation and personal hygiene in combating disease; a righteous desire for social and economic justice to all ranks of persons:

> In seeking the cause of this epidemic, (Miss Blackwell wrote) we are unable to find any which would indicate an essential difference between it and many preceding ones. Ireland, from which the immigrants chiefly came, has often suffered from sickness produced by general destitution. In 1847 an epidemic prevailed, caused by wet changeable weather, which ruined the harvests, and reduced the people to a scanty supply of unwholesome food. Many a " Famine Fever," has stamped its dismal image on the minds of older inhabitants. But so fearful a state of universal destitution and sickness, as prevailed in 1847, has not been recorded in the annals of that unhappy country. It seemed to be a summing up of the horrors of all former suffering.
>
> To escape the terrible evils of famine and pestilence, which threatened them at home, the lower classes of the inhabitants hastened in crowds to take refuge in America. The ill ventilated steerages of the emigrant ships were filled to overflowing, the air becoming constantly more impure from the bad habits of the passengers; their stores of poor provisions were frequently insufficient to sustain them, the water was often bad, and limited in quantity—here deprived of all excitement, without employment or exercise, their minds had time to brood over the fearful scenes they had left—fear, sorrow, anxiety, joined with the physical evils of their condition, tended to depress the vital energy, and the seeds of disease sown

in their constitution were thus nourished into life; the disease broke out with great violence and many died before reaching land.

In some patients, " Ship Fever " began suddenly with chill, headache and prostration. More frequently premonitory symptoms such as headache, pain in the back, general malaise, weakness, chilliness, hot flushes, and loss of appetite laid the patient low after several days. Nausea and emesis were early symptoms. Intestinal complaints varied from diarrhea to constipation. Excitement, stupor, delirium were sometimes present. On examination, the skin was found to be hot and dry; the tongue coated. The eyes were heavy and blood shot. An eruption appeared all over the body, particularly on the chest and abdomen, and lasted four or five days. The rash resembled that of measles. In fatal cases, it changed to a purple color and persisted while the fever assumed a more malignant character.

With death of the patient " the body frequently swelled and became of a dark purplish hue which appearances subsided after the lapse of a few hours." Post-mortem examination disclosed congestion of the brain and its membranes. The liver and spleen were decreased in consistency and enlarged. The spleen was especially increased in size. In one case it weighed seven pounds. Occasionally extensive lesions of the alimentary canal were observed. Sometimes the glands of Brunner were involved and the isolated and aggregated glands of the ileum were found in a state of enlargement and ulceration.

According to Miss Blackwell, the staff at Blockley Almshouse employed various methods of treatment. The mortality rate in the epidemic was about ten per cent.

No more fitting conclusion for a paper on Elizabeth Blackwell and her first medical publication could be offered than the final paragraph of the thesis on " Ship Fever." Not only do the words of this paragraph reveal to us, looking backward to her time, the character of Miss Blackwell, her mind, her heart. But truly applicable are they also in spirit for these war days when famine and flight and fever again harrass so many peoples who yet bear up in hope of a fuller, healthier, happier life in universal peace and mutual understanding.

We have thus seen that the Ship Fever epidemic presented nothing peculiar or mysterious in its history. As it sprang from the same causes, so it presented the same phenomena as the ordinary typhus which always exists in a more or less degree in the crowded alleys and dismal cellars of our large cities. When the laws of health are generally understood and practiced: — when a social providence is extended over all ranks of the community, and the different nations of the earth interlinked in a true brotherhood—then we may hope to see these physical evils

disappear with all the moral evils which correspond to and are closely associated with them.

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MEDICO-HISTORICAL NEWS AND ACTIVITIES

The Beaumont Medical Club, New Haven, Conn.

Under the auspices of The Beaumont Club Dr. Reginald H. Fitz of Boston spoke in the Yale Medical Historical Library on June 16, 1944. His subject was "The Importance of Conviviality in Advancing Medical Knowledge."

Switzerland.

The proceedings of the 123rd Session of the Swiss Society of Natural Sciences held at Schaffhausen on August 28-30, 1943 have recently been received. It contains abstracts of the following papers read in the Section on the History of Medicine and Science:

Emil Walter (Zürich): Soziologische Grundlagen der wissenschaftlichen Forschung im alten Zürich.

Rudolf von Fellenberg (Bern): Eine Vorlesung über den Kaiserschnitt aus dem Anfang des 19. Jahrhunderts.

Edgar Goldschmid (Lausanne): Lepra einst und jetzt.

Hubert Erhard (München): Gab es schon im Altertum eine Abstammungslehre?

Gustav Senn (Basel): Der Rebbau in antiken Griechenland.

Jacob Schneider (Altstätten, St. G.): Das geschichtliche Alter des Schaffhauser Paläolithikums nach Nüesch, Spitaler, Milankowitsch, Nipkow.

Hans Fischer (Zollikon): Aus dem Leben Johann Conrad Fischers (1773-1854).

Bernhard Peyer (Zürich): Bildnis und Siegel des Anatomen Johann Conrad Peyer.

(*Actes de la Société Helvétique des Sciences Naturelles*, 123e Session annuelle, Schaffhouse, 1943, pp. 161-170.)

BOOK REVIEWS

BENJAMIN SPECTOR. *A History of Tufts College Medical School, Prepared for its Semi-Centennial, 1893-1943.* Boston: Tufts College Medical Alumni Association, 1943. 414 pp. Illustrated.

ALAN M. CHESNEY. *The Johns Hopkins Hospital and The Johns Hopkins University School of Medicine, A Chronicle.* Foreword by William H. Howell. Volume I, Early Years, 1867-1893. Baltimore: The Johns Hopkins Press, 1943. xviii + 318 pp. Illustrated. $3.00.

These two books are being reviewed together not only because they discuss medical schools which were founded in the same year 1893, but because these two institutions in their early days illustrate two phases in the history of medical education in this country. The over-simplified picture of the evolution of the modern American medical school is well known. From early colonial days until well into the 19th century, most physicians learned the art of medicine as apprentices to experienced doctors; the earliest medical schools which began on a sound academic basis were followed by an abundance of decidedly inferior schools, most of which were of the proprietary type where the stimulus of large classes and monetary reward exceeded that of scientific advancement and improvement of teaching methods. Such schools often tried to increase their prestige by allying themselves with a university or college of good repute. The final phase in which we are today has removed medical education from a profit basis, imposes the highest standards of teaching and equipment upon the schools, and makes them genuine research institutions.

It is a truism to mention that progress does not proceed in a straight line, that a step in a new direction is at the same time accompanied by dozens of steps in the old, well-trodden path. It is precisely this point which is illustrated so well when the early history of Hopkins and Tufts are examined. In our outline, Hopkins from the very beginning is the prototype of the third phase, and Tufts of the second, but, it must be emphasized, only in its origin and first years. For fear of being misunderstood, I do not make this comparison in any spirit of criticism or condemnation. Each school grew out of entirely different circumstances, and the fact that they both exist today as grade A schools is a testimony of the progressiveness and adaptibility of Tufts.

In July, 1893 seven physicians, who had previously been faculty members of the Corporation of the College of Physicians and Surgeons of Boston and who had resigned because of questions of policy, petitioned Tufts College, a liberal arts college founded in 1852, to be permitted to establish a medical school as a department of the College. The physicians agreed to pay all the expenses of the school, to furnish a building and necessary equipment, and in return, all surplus income accrued during the first three years should be given to the Medical Faculty. The

appointment of lecturers and instructors, the catalogue, terms of admission, etc. were to be subject to the approval of the Trustees of Tufts College.

This proposition was accepted by the College, and Tufts College Medical School opened its doors on October 4, 1893. After the three year trial period during which the school grew from 80 to 176 students and the faculty demonstrated its awareness of the changing standards in medical education by lengthening the curricula from 3 to 4 years, and enlarging and improving its equipment, the Medical School became an accepted department of the College. The connection between the two ceased to be purely nominal. Finances and matters of policy were directed by the College, although for a number of years the surplus income of the Medical School was divided among the teaching staff to augment the small fixed salaries. In 1910 the report prepared by Abraham Flexner for the Carnegie Foundation revealed that the chief criticism of Tufts was the admission requirement, which was sometimes less than a four-year high school course. The same criticism, however, applied also to Jefferson Medical School, New York University, University of Maryland Medico-Chirurgical Faculty, Yale, and the University of Pennsylvania. In subsequent years the necessary adjustments were made, and Tufts has demonstrated itself to be a constantly alive and growing organism. It has produced the greater number of physicians practising in New England today.

Contrasted with this picture of gradual growth and modification, slowly tempered by the years, the Johns Hopkins Medical School was deliberately planned to be a new phenomenon, an institution in advance of its day, an experiment in medical education. When in 1867 the wealthy Baltimore merchant made his will in which he provided for two new institutions to bear his name, The Johns Hopkins University and The Johns Hopkins Hospital, he provided the financial means whereby the "last word" in progress could be incarnated. Experienced and skillful advisers were obtained to survey institutions at home and abroad. Able councillors such as John Shaw Billings and Daniel Coit Gilman, both men of imagination and vision, laid down the principles to be followed, and after years of careful preparation the institutions were opened, the University in 1876 and the Hospital in 1889. Unfettered by tradition, it was relatively easy for them to assume the part they were especially designed to play. The University set a new pattern of graduate education in this country, while the Hospital served as a model in hospital construction and organization. Because of financial reverses, the medical department of the University was not opened until 1893. Pressure was exerted to establish it earlier, but here again the desire to set a precedent which would be spoiled by inadequate facilities postponed any premature attempts. In October 1893, the new medical school was launched which introduced a new phase in medical education in this country and placed the quality of instruction on a higher plane than ever before. The chief significance of Hopkins lies just in this early period, and today it no longer stands out in such a spectacular manner. It is a first-rate school among dozens of others; its original function has been fulfilled.

Dr. Alan M. Chesney, the Dean of Johns Hopkins School of Medicine, has given us a carefully detailed account of the establishment of the Hospital and Medical School from their incorporation in 1867 to 1893 when the Medical School was opened. A second volume is planned which will bring the history up to the present. The author leads us chronologically through the various trustees' meetings,

the fixing of policies, appointment of personnel, etc. He has brought together the scattered material from the Hospital and University archives and arranged it in an orderly survey, reprinting large sections of important letters and documents, and reproducing many early photographs. Useful biographical data concerning all the individuals connected with the creation and early days of the Hopkins are included. The book is correctly named a chronicle, since it does not seek to interpret the data collected nor to correlate them, except in a few instances, with the larger setting of American medical and educational history.

The history of Tufts College Medical School from 1893 to 1943 has been skillfully prepared by Dr. Benjamin Spector, Professor of Anatomy and Professor of the History of Medicine at Tufts. It is chiefly in the form of a source book with all significant documents reprinted in full or in attractive facsimiles. Such facsimiles include the first announcement of the Medical School and the Thirty-Eighth Annual Commencement program of Tufts College which contains the first commencement program of the Medical School. The book is richly illustrated throughout and presents for the first time photographs of the Deans and Department Heads during the entire 50 years of the School's existence.

Both of these books are extremely fitting commemorations of the schools which they describe.

GENEVIEVE MILLER.

DEBORAH MACLURG JENSEN. *A History of Nursing.* St. Louis: C. V. Mosby Company, 1943. 310 pp. $2.75.

This is a compact synopsis of nursing history. The factual material is generally accurate, and text, viewpoints, bibliographies, and illustrations follow the pattern made familiar by several preceding histories of nursing. Thus, there is little to condemn and little to praise: "It is just another book on the history of nursing." There are numerous problems awaiting investigation—the reviewer has adumbrated some of them in One Hundred Seminars in Nursing History—and what is needed is a series of monographs rather than one textbook after the other, all covering the same ground from the same sources in the same manner with the same pictures. If publishers continue to insist on textbooks which include the entire field of nursing, then those who prepare these works should remember that even a textbook can be based on research.

It is stated (p. 234) that Clara Barton "established close cooperation with Miss Nightingale who later followed American developments with warm interest." Miss Barton, who could not cooperate with anyone, but was always the little lone lady in black silk, never had anything to do with Miss Nightingale, and Miss Nightingale was not aware of the American Red Cross: the two ladies neither met nor corresponded—and there is a very good reason why. The book opens with a frontispiece of Florence Nightingale against the background of the sea: Miss Nightingale, idealized and aureoled, is holding a bunch of roses in one hand and a burning lamp in the other; a light shines in her eyes, and she looks like a beautiful young saint. Miss Nightingale would have greeted that fanciful portrait with corroding comment. The reviewer believes that nursing students have really

outgrown this sort of thing. The volume will prove useful to those who approach the history of nursing for the first time.

VICTOR ROBINSON

ISABEL MAITLAND STEWART. *The Education of Nurses.* New York: The Macmillan Company, 1943. 399 pp. $3.50.

The lively face and snow-white Dundreary whiskers of the venerable Sir James Crichton-Browne (1840-1938) were a familiar sight in Dumfries, Scotland, for he had practised medicine for over seventy years, and was one of the sturdiest of nonogenarians (" Look at me, I don't look 96, do I? Well, I don't feel 96 "). This post-Victorian author of *Victorian Jottings*, had some strange recollections: he could recall that when he had charge of an asylum (1865), the nurses in the wards could not read the labels on the medicine-bottles, and asked the lunatics to decipher the directions. It should be remembered that not until years later (1874) did the hospitals of England begin to demand nurses who were able to read and write. These somber reflections are aroused by the sight of the substantial volume before us.

Professor Stewart begins her work with a sketch of nursing education from primitive times to the founding of the first Nightingale school (1860), and it is both strange and true that all these centuries naturally fall into a single chapter as far as nursing education is concerned: there was no nursing education until Florence Nightingale opened her school at St. Thomas's Hospital under the redoubtable matron, Mrs. S. E. Wardroper. The following two chapters deal with the Nightingale system in England and America, and with the fourth chapter the author launches into her main theme: the organization of nurses (to which Miss Nightingale was always opposed) and the improvement of educational standards. The author's familiarity with the struggle to attain these standards, including the social and economic problems involved, is first-hand, for Miss Stewart, as successor to Mary Adelaide Nutting, has long been a leader in the education of nurses.

Incidentally, *A Short History of Nursing*, by Lavinia Lloyd Dock and Isabel Maitland Stewart (New York, 1920-38), is still unapproached as the best one-volume work on the subject, being a condensation of the important four-volume *History of Nursing* by Miss Nutting and Miss Dock (1907-12). Miss Stewart appropriately dedicates *The Education of Nurses* to Miss Nutting and Miss Dock as pathfinders in nursing.

VICTOR ROBINSON

GERSTLE MACK. *The Land Divided; a History of the Panama Canal and Other Isthmian Canal Projects.* New York: Alfred A. Knopf, 1944. xlix+ 650 pp. 45 illus., 17 maps and diagrams. $6.00.

The story of the construction of the Panama Canal has immortalized the name of W. C. Gorgas and has entered medical history as the record of one of the most conspicuous accomplishments of American medicine. It seems, therefore,

perfectly legitimate to announce in this journal a book which devotes, in addition to numerous casual remarks, two excellent chapters to the health history of the Panama Canal during the French and the American period. In telling the whole story of the Panama Canal in *all* its aspects, this book is not only a valuable contribution to medical history, but also to the history of geography and exploration, the history of engineering and economics, the history of diplomacy and imperialism.

It will come somewhat as a surprise to most readers that the first canal projects are more than 400 years old, having begun as soon as the Spanish conquerors had satisfied themselves that there was no natural communication between the two oceans. The first 100 pages of Mr. Mack's book are therefore rightly devoted to the Spanish Era. The second part, starting with Humboldt's nine proposed routes, deals with the manifold plans and explorations of the 19th century before the tragic "French Era," which in a third part finds a just and exhaustive treatment. The last 150 pages describe the American Era.

In so far as medical history proper is concerned, it has already been stated that the book is thoroughly reliable in dealing with the medical side of the story. The reduction of the health problem during the French period to its true proportions is absolutely justified. That the French did not fail because of disease can be shown on the basis of Gorgas' own observations. The courageous man, who will some day complete our proud catalogues of famous doctors with the names of those colleagues who were more notorious than famous, will find the buccaneer doctors in Mr. Mack's book, the swindlers Ed. Cullen and Cornelius Herz, not to mention others who might still have living relatives, some first rate specimens for his list. I disagree with Mr. Mack on a very minor point, namely, that the good health conditions of the unfortunate Balboa's men may be attributed not to Balboa's leadership, as Mr. Mack believes, but to the fact that the Isthmus at the time (1514) was not yet so thoroughly infected with yellow fever and malaria, both of which are now regarded as importations of the conquistadores.

The choice of the subject of the book, so extraordinarily rich in potentialities, was in itself a stroke of genius. And different from those who tantalize us by dealing in an inadequate manner with the excellent subject, the author has given us not only an extremely interesting and readable book, but, what is more, a complete and reliable study, based on first hand sources. Mr. Mack, who was originally an architect, has already secured a reputation as a historian by books on Cézanne and Toulouse-Lautrec. With this new book he certainly has greatly enhanced an already enviable record.

ERWIN H. ACKERKNECHT

A Medical Bibliography. A Check-List of Texts Illustrating the History of the Medical Sciences. Originally compiled by the late FIELDING H. GARRISON, M. D., and now revised, with additions and annotations, by LESLIE T. MORTON, Librarian, St. Thomas's Hospital Medical School. London, Grafton & Co., 1943. vii + 412 pp. $12.00.

In 1912 when Garrison devised his original list of texts illustrating the history of medicine, he was inspired to do so by the great medical bibliographer, Sir William

Osler. Garrison himself had in mind, to use his own words "a scaffolding for a book on the history of medicine," which he published the following year. This authoritative work, modestly entitled *An Introduction to the History of Medicine*, immediately became recognized as the last word in medical history. Garrison, never ceasing his work on the original bibliography, revised and re-published it in 1933 in the first volume of the *Bulletin of the Institute of the History of Medicine*. Now, ten years later, Leslie T. Morton, eminent English librarian and author, has brought forth a book based upon Garrison's 1933 list which may worthily be compared with the famous *Bibliotheca Osleriana*. No higher praise can be given.

The 1912 list of texts, which appeared in the second series of the *Index-Catalogue of the Surgeon-General's Office*, was arranged by historical periods, such as Pre-Hippocratic, Byzantine, and 17th Century. Within each period were included the scientific discoverers of that age and their contributions to the medical sciences, concluding with a lengthy list of those who made "Original Descriptions of Diseases." The 1933 revision emphasized the subject, such as Biology, Botany, Anatomy and Physiology, with the literature arranged chronologically in each field. Morton, using a similar subject classification, with expanded headings, has brought the list down to current day developments. The names of the authors, arranged in chronological order, stand out clearly in bold-face type. One may trace, for example, the texts illustrating the progress of clinical work in diabetes mellitus, beginning with Aretaeus who in the first century described diabetes and gave it its name, through Willis whose publication in 1674 took note of the sweetish taste of urine in diabetes, to Banting's isolation of insulin in 1922. Some of the most recent medical discoveries are listed by Morton, among which are the use of sulphapyridine in the treatment of pneumonia first reported in *Lancet* in 1938, the isolation of penicillin in 1940, and "a clinical trial of a new sulphonamide" in 1942.

The distinguishing features, of course, between Garrison's bibliography and Morton's are the annotations and the excellent indexes, of both personal names and subjects. Reminiscent of some of the descriptive comments by Osler in his *Bibliotheca*, Morton's annotations show careful scholarship and painstaking research. From an historical point of view they contribute almost as much as the texts themselves, and serve as a valuable aid in checking bibliographical items.

There are only two features, in this reviewer's opinion, which might improve the entire book, and as they stand now they do not greatly impair its usefulness. One of these is the omission of a detailed table of contents. One must thumb through the pages to find the countless small subject headings under the larger divisions. For example, Anatomy and Physiology, consisting of over a thousand entries, is broken down into 27 small divisions some of which are as follows:

ANATOMY AND PHYSIOLOGY

Anatomy: General works
History of Anatomy
Embryology
History of Embryology
. . . . . .

Nervous system
Peripheral nerves
Peripheral autonomic nervous system
Chemical transmission of nervous impulses
Spinal cord
Brain, including Medulla; cerebrospinal fluid
etc., etc.

One can only wish that war time conditions had not affected this particular reference work by reducing its size to what one may characterize as a "handy" volume. The print while clear and well-spaced is extremely small. A total of 5506 entries is crowded into 354 pages. In spite of these minor details the work takes an important place among bibliographical tools, especially those related to the medical sciences. Medical historians, librarians, and bibliophiles will soon realize that it is indispensable.

JULIA E. WILSON

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